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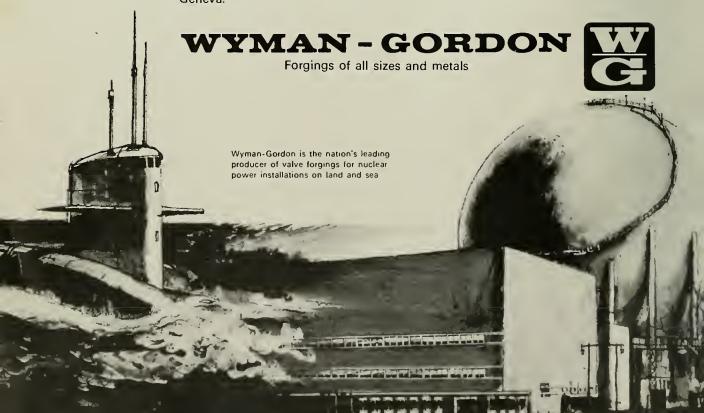
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Crisis in the Suburbs

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New York's Mayor Lindsay certainly has more than his share of problems, and most Americans do not envy his responsibilities. However, what most fail to realize is that time is running out for all of us. To learn about what may well be an inevitability, unless we do something now, read this hardhitting article.

A Computation Primer

page ten

It has been said that this field is the fastest-growing industry in the country. Those who fail to utilize its capabilities may very well face financial ruin. In a concise article, Dr. Sondak discusses this newest of engineering tools.

Commencement Week

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The academic year came to a close with Tech's 101st Commencement. Commencement weekend was not only for graduating seniors, but also encompassed eleven reunions. If you missed the festivities, you will enjoy reading about them. If you were there, this issue will be a good reminder for years to come.

Message from the New Association President

page twenty-four

On the occasion of his election, the Alumni Association's new president, Robert E. Higgs,'40, sets forth his thoughts for the coming year. "To serve the cause of higher education is one of the most needed personal contributions in the world today," he states.

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"And so not too much is done, and the problems worsen."



by

B. Allen Benjamin

Professor of Civil Engineering

IT ALL BEGAN IN THE CITIES. Anyone who has not spent the last decade with his head in the sand is painfully aware of the crisis in our urban centers: that we are becoming a nation of "sick, sick, cities." New York, of course, exemplifies the ultimate in urban disintegration, with its overwhelming problems of congestion, noise, ugliness, air pollution, slums, ghetto unemployment, crime, and poor schools. These same problems are with us in hundreds of cities throughout the United States, and if their magnitude is smaller there than in New York, so are the local financial and administrative resources for dealing with them.

Cities should be well on their way to robust health, if sheer attention could cure, since prescriptions for their ills are turned out in ever-increasing numbers and in stupefying detail. "We do know," says the urban expert, "what is needed in City X by way of physical and social improvements, but we just don't have the money to pay for them." While there may be wide local differences of opinion as to whose money should be spent (U.S., city, private enterprise, or "black capital" dollars), and what should be bought first (highways or hospitals, housing or schools), almost all agree that the total dollars needed is very large indeed—far more than what has been spent on cities in the past (over a similar period), and far more than what seems to be now available for spending. And so not too much is done, and the problems worsen.

SUBURBAN GROWTH AND THE NEXT CRISIS. Meanwhile, in vast, sprawling areas on the fringes of the cities, an often overlooked crisis of potentially greater scope is building up. This "suburban crisis" is primarily the result of the unplanned, uncontrolled expansion of urban development into formerly vacant

or rural areas. The outward pushing of cities with-draws from agriculture, recreation and other rural uses (often prematurely) a total land area each year equal to one-half the size of Rhode Island. The indiscriminate location of this development often needlessly destroys irreplaceable natural and scenic resources. Its general gravitation toward previously non-urbanized areas inherently results in a deficiency of public facilities (sewers, fire stations, parks, good roads, schools, etc.), and its discontinuous pattern makes their subsequent provision extremely inefficient. Finally, the over-all physical quality of this growth is poor, so that even well-designed individual structures and projects end up surrounded by shoddy and chaotic semi-cities, or development "slurbs."

Many suburbs are beyond improving, while others—like the central cities—need massive expenditures to correct past mistakes and deficiencies. However (and this is the main point of this article), there are hundreds of still-developing areas where something can be done, done now, and done fairly cheaply. We can minimize (or at least reduce) the cost of serving growth; we can conserve our most valuable resource areas and still have city expansion; and we can enhance the over-all quality of suburban development: all by the simple and relatively inexpensive device of comprehensive regional planning combined with stringent regional development controls. Let us examine the elements of the crisis in a bit more detail, considering first the quality of suburban areas.

SLEEZY SLURBS. A number of critics have attacked suburbia—both new and old—on social and economic grounds, indicting the "segregation by income," the "social sterility," the "political apathy," and the "narrow provincialism" which they see as common characteristics of suburban life. Others rise to the defense of the suburbs as offering the best of both the city and the country, and a way of life which, if temporarily out of reach of some, is available to all when they make the grade.

Here, however, our concern is with *physical* flaws in suburbia. This is a matter in which one might expect some general agreement, for there are few individuals who find real *merit* in sleezy construction, lack of open spaces, clogged roads, overflowing cesspools, lookalike houses, and an indiscriminate mix of business, industry, and homes. Such conditions exist to a varying degree in almost every town, with the possible exception of the ultra-high-class suburb protected over the last two decades by large-lot, single-residence requirements and an unwillingness to sell on the part of many landowners.

The quality of suburban development, in all its aspects, can, theoretically, be controlled at the local

level by comprehensive zoning, a modern building code, and reasonable subdivision regulations. In practice, however, most towns faced with growth do not adopt such measures until too late, or adopt them in partial or weak form. The very areas where growth is most imminent are the still-rural towns which do not yet see the need for control. Why get excited about just a few converted trailers and roadside stands along the highway?

Even in the more built-up suburbs, where controls of a sort do exist, zoning is being used to make the good towns "better" (i.e., more exclusive), and the bad towns worse (i.e., more permissive of anything, as long as it pays taxes and doesn't send children to the schools). If it were not for their almost complete dependence on real estate taxes, one may suppose that even the latter towns would like to say no occasionally.

FAULTY FACILITIES. Another major element of the crisis has to do with the public facilities that are sooner or later needed to serve growth areas. While many relatively small, urban projects do locate on vacant tracts in or adjacent to already built-up sections, larger projects and economically marginal uses tend to gravitate toward the periphery of the urban-rural fringe, and even out into the far countryside. As one goes away from the urban center, land is easier to obtain or assemble, and its cost per acre decreases. Thus, closer-in sites are often left vacant for years, passed over for the more available, less expensive sites in the hinterland. This "leapfrog" process results in the early urbanization of the very sections least served with full public facilities.

Either one of two things then generally happens; (1) new residents and others in the scattered development areas go for years with deficient facilities (no sewers, no parks, no fire stations, etc.), or (2) sufficient political pressure is applied to obtain the missing improvements, at what ends up as a cost to the general public excessively high per user. This high cost per user results from a combination of two factors, both working in the same direction: The large underdeveloped areas remaining between the projects and the already built-up center, necessitate extra miles of linear facilities (improved access roads, water, sewer, and other utility extensions, school bus and other public transportation routes) as compared with a close-in location. For the district facilities (those with a fixed service area such as parks, fire stations, and libraries) the low gross density of the seattered projects produces fewer users per square mile to share the cost.

Local zoning does not help in this regard, since it can only regulate the type and density of development when and as it occurs, and cannot regulate its location or timing. What is needed, many believe, is the re-



Can we save our lakes and streams

gional designation of growth-priority areas, with urban development discouraged, or better, completely prohibited in low priority areas until the high priority ones are nearly filled up. Thus, urban growth would proceed over the years from built-up centers outward in more or less contiguous bands.

Such a program of growth-area priorities would reduce short range costs an appreciable amount. In addition to avoiding partially unused extensions of linear facilities, and initially under-used new district facilities, it would also take advantage of any inherited capacity in the major services of the built-up core. Sometimes (though with increased rarity), an existing hospital, airport, museum, college, or large recreation facility can handle more users than it now serves and actually benefits (in lower costs per user) from increased patronage.

A few key facilities, however, almost always have to be expanded in proportion to population growth, and this need is independent of its locational pattern (scattered or contiguous). In such cases, regional planning can help in another way, and that is by recommending the provision on a regional (rather than town by town) basis of all new facilities for which there is an acceptable economy of scale. Regional high schools, now well accepted in many jurisdictions, are a case in point. Health, water supply, sewage treatment, and solid waste disposal facilities are all being increasingly regionalized. As such facilities come into existence at the regional level, there will be even more need than now for controlling the location of urban growth, since the larger a facility, the more likely it is to have when first built, substantial excess capacity which can be beneficially utilized by additional close-by development.

RUINED RESOURCES. The deficiency of needed facilities discussed above can be overcome by spending more money (though as noted, the amount needed may be reduced). However, the destruction of natural resources by improperly located urban development is permanent and irrevocable. One may immediately say, yes, but urban development is the "highest and best use of the land," so if some resources have to go, so be it. It is here believed that through proper planning and control, we can have both resources and development. The present problem arises from the premature and needless destruction of resources while other non-resource sites are still available for development.

One type of resource often being prematurely destroyed is good agricultural land. While our total national acreage in farming is still extensive, and we are constantly increasing production, numerous tracts of land ideally suited for particular crops are definitely limited in quantity. Such areas, meeting rigorous re-



... or will they end up like this?!



quirements of soil, slope, temperature and proximity to urban market are definitely in short supply. Apple orchard lands in Massachusetts and walnut groves in California are examples of this type. The maintenance of some farm land near cities is also important to the non-farmer. It provides him with an attractive general environment, nearby open space for hiking, touring, hunting, fishing and other extensive recreation activities, and a visual contrast to acres upon acres of closely-packed buildings and blacktop.

A study made by the Massachusetts Dept. of Commerce shortly after World War II indicated that the entire population of the state could be re-housed on then-vacant land (within fifteen miles of the larger cities alone), without using a single acre devoted to agriculture. Since that study was made, many farms have gone under the bulldozer in Massachusetts and elsewhere. The destruction of farm land is even more insidious than meets the eye, for it is an accumulative process. The scattering of only a few developments through a rural area tends to commit that entire area to urbanization. This is because the farms remaining between the scattered projects are almost at once handicapped by having to pay real estate taxes on a speculatively increased land valuation, and pay at an increased rate as well—to cover urban services that the farmers neither need nor want.

Another type of resource area being lost to development is the flood plain. Like farm land, the level areas along the sides of low-gradient streams are attractive spots for the builder. Little or no clearing is called for, and grades are favorable. But when a major flood occurs, both the occupants and the general public pay deferred costs for urbanizing there: the occupants, for their property damage; the general public, for the flood control works that often follow. Moreover, every building and filling operation within the flood plain increases subsequent flood levels downstream.

These natural flood water storage areas should, it is believed, either be kept entirely free of development, or if utilized, only occupied by non-structural uses such as parking lots and golf courses. A special type of zoning by cities and towns, known as "flood plain zoning," is authorized in most states, but as in Massachusetts (where less than a dozen communities have chosen to adopt it), the typical community ignores floods areas, and permits them to be developed whenever the owners wish. Even worse, the typical community designates such areas in its regular zoning ordinance as "residence," "business," or "industry" This not only misleads the public as to the suitability of development there, but is a positive invitation for such use. Again, planning and development control

on a regional basis could step in where cities and towns fear to tread.

Wetlands are also rapidly disappearing. Not many years ago, a swamp or marsh was considered as "wasteland" where any development at all would be an improvement. This may still be the right view in the case of small wet areas already surrounded by urbanization and filled with junked cars and floating beer cans. However, ecologists now recognize that many larger marshes and swamps have high natural resource value, and should be kept permanently open.

Such wetlands provide shelter and food for wildlife, and sites for limited recreation: hunting, nature study, and the like. Often, they are of economic value in commercial trapping and fishing, the latter especially along the edges of lakes and by the seacoast where they produce the food on which the nearby fish population depends. Although a less fully understood function, many wetlands are also considered to be groundwater recharge areas, the maintenance of which in an open state may be vital to the long-range continuation of our public water supplies.

Except in Massachusetts (which led the nation in adopting laws to regulate, statewide, both inland and coastal wetlands), wetland areas are generally unprotected. Flood plain zoning, referred to above, is not applicable unless the area is also "subject to frequent and periodic flooding," and regular zoning, as already noted, may not be used—in its present form—to prevent development. Thus, over-all regional protection seems necessary.

Areas of scenic value are another type of resource fast disappearing with growth. Although many outstandingly beautiful sites are protected by inclusion in national, state, county, city or semi-public parks and reservations, most of our still attractive countryside remains in private hands. Year-round residents often pick a community in which to live because of its appearance, or at least the appearance of its surroundings. Vacation home owners locate their seasonal dwellings in what they consider to be an attractive area. The multi-million-dollar tourist industry is built on "See beautiful so-and-so." All, if they think about it, are relying on the indefinite continuation of the visual attractions of their area.

But things are changing fast. With more time to travel, more money to spend, more people on the move, and express highways leading everywhere, even the most remote sections are vulnerable to some sort of development. Often this follows the roads and secondary highways (if not the expressways, with their limited access), so that although back land is still open, the motorist is given the impression of general urbanization. Roadside development is not

only linear, but spasmodic, so that mile after mile of frontage is prematurely changed in character from rural to developed, even though vacant frontage intervenes.

In vacation areas, so many tourist facilities, mixed with signs announcing others ahead, have sprung up along the roadside one wonders how long it will be before the vacationers themselves will be repelled by the very facilities intended to serve them. Closer to home, in suburbia proper, one suburb appears to be merging into another, as the natural greenbelts separating them are invaded by building along the length of every connecting artery.

Again, it is not a matter of development vs. no development, but rather "a place for everything and everything in its place." Due to the geographic scale of roadside development, its independence of political boundaries, the failure of many towns and cities to act, and the basic lack of really effective local zoning, it would seem that regional planning and control is once more the answer.

TIME FOR A CHANGE? The word "control" is a dirty word to many, even when it is limited to "development control." Yet, at the local level, we accept and even welcome zoning regulations of sorts when they "protect" our own property against a threatened use in the neighborhood that we don't want. We also protest when the open field in which our children have played (but which belongs to someone else) is ip for development, and we find that neither zoning nor subdivision regulations can keep it open. The word "regional" also may stir people up, for by its very nature it means some loss of local autonomy. Suburbanites as a group not only want no part of the central city (though there are notable exceptions), but also want no part of other suburbs, especially those that have not been as careful as theirs in the way past growth was handled. This independent attitude is protected and encouraged by arbitrary political boundaries, nostalgic town meeting government, and a tax policy which promotes intense competition with other towns to bring in high value industry, and to keep out low value housing.

But perhaps it is time for a change. With our tremendous mobility, our "home" is more and more our region (and not just Town X). Whenever we cross town boundaries into less advantaged other suburbs and rural areas, we are almost as bothered (and sometimes, endangered) by congestion, noise, pollution, and other deficiencies encountered there as are the area's own residents—at least momentarily so. And whenever we pay, through State and Federal taxes, toward "equalizing" the general level of school, public health, welfare, transportation, recreation and other public

"Many suburbs are beyond improving, while others . . . need massive expenditures to correct past mistakes and deficiencies."

services, we are in another way affected by the inadequacies of other parts. Isn't it time, therefore, to insist on some over-all "quality control"—to have some say as to how other communities develop, and how our entire region grows?

THE SUGGESTED REMEDY. The first part of the remedy herein suggested—regional planning—is already increasingly available. Massachusetts is one state where the entire land area is subject to planning by existing regional agencies. But short of making recommendations and reviewing certain applications for Federal grants, most planning agencies are powerless. Let us give these agencies the second, and most important part of the remedy for chaotic growth—overall, regional control of all future urban development.

Development control regulations would be somewhat like local zoning regulations applied at the regional level, but, unlike local zoning, would include non-development districts and growth-priority areas. In growth areas, permitted types of use and average gross density would be set, leaving to local ordinances the specification of net densities, building heights, yard requirements, and other details.

Perhaps other remedies are also possible, but time is short, and each day another 1000 acres becomes the city of the future; each day, more farms, flood plains, wetlands, and scenic areas are lost forever; each day, more urban sprawl, much of it shoddy, covers the land. It is the technology we have created that facilitates this change, so perhaps we do have an obligation to deal with its consequences. Among the responsible causes are our ability to travel long distances between home and work (and still longer on vacation), to easily alter the shape of the earth, and to erect rapidly and cheaply innumerable structures thereon. While inside these structures—be they homes, businesses or industries—there is remarkable efficiency, order, and good planning; outside, extravagance, disorder and destruction still reign. Let us now plan and improve our man-made environment on a grander scale.

A Computation Primer

by
Dr. Norman E. Sondak
Professor of Computer Science

The computer has become the universal symbol of our modern technology. If a product or service is to be considered efficient and up to date, it is somehow associated with a computer. Yet, for all practical purposes, electronic digital computers are less than 20 years old, with the real propagation of computer installations occurring in only the last ten years. Why has this happened? Is it a transient effect or are we only at the beginning of a really steep growth curve for computers development? point of fact, the report of the Scientific Advisory Committee to the President of the United States maintains that the use of computers and the discipline of Computer Science are just entering into their infancy after a period of development unparalleled in the history of technology. In order to understand what has happened and to gain some insight into what might happen, we must define Computer Science and examine the broad use of computing equipment.

Computer Science is the study of the fundamental nature of information, how it can be processed, stored, retrieved, transmitted, and displayed for use by both humans and machines. It covers the design and control of the devices that handle information, their basic elements, and how they can be organized into the most efficient processing system. It treats the solution of a wide variety of problems with support of non-human intellectual amplification. It is, therefore, intimately involved with almost every facet of human endeavor and as a discipline it could not exist without the advent of the high speed digital computer.

Historically, computing and the use of the computer has developed in three major areas. These are scientific, commercial, and process control applications. The computer, because of its high arithmetic and logical speeds, can handle scientific problems that otherwise The IBM 360 are intractable. Model 40 Computer at the Computation Center at Tech can perform over 6,000,000 additions or compare over 3,000,000 different five-character strings in one minute, and there are a number of faster machines than the 360 Model 40 available. Even with this speed, problems handled by junior and senior students have required over a half-hour to process. Graduate and research work has used hours of computer time for single runs.

But there are still thousands of jobs performed which execute in seconds. The great bulk of these short runs are of a test or experimental nature to try out a program or prove a concept. In this work, the computer user attempts to interact directly with the computer to solve a particular problem. The trouble is, however, that the ma-

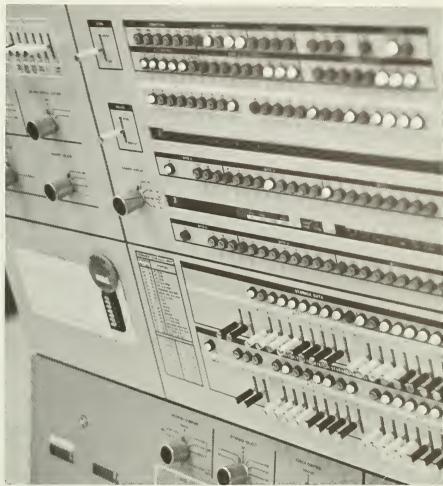
jority of current computers are organized to operate most efficiently in what is called the batch mode. That is, a number of like jobs are collected (batched) and performed in sequence and when the batch is exhausted the computer is set up to perform another function. This creates a turnaround time problem for the user of the computer. He may have to wait minutes, hours, or even days for results of runs that took seconds to be completed because of the schedule set up for use The batch of the equipment. mode is efficient for machine utilization but can be very wasteful of the human resource.

The scientist or engineer, be he a student, professional, or scholar, would like response from the computer in the same time order as the problem posed. If the work took a second, the answer should be available in seconds, if a minute was required, then minutes could elapse for a reply and so on. The trend for computer systems will be in the direction of so-called time shared direct response computer resources, and the effect will be profound. The scientist and engineer will make much greater use of the computer because this power will be accessible and convenient both in terms of rapid response to problems from the computer and geographical availability from computer terminal devices that are located near or in his working area.

And some people still use an abacus!

This proper use of the computer will allow many scientists to assess the system and give them the impression they have the exclusive use of the equipment. In reality, the computer is performing the shorter tasks rapidly and returning these results, while the longer jobs are simultaneously being processed.

In addition, the means by which a scientific problem can be described to the computer is becoming simpler and more direct for the human user. The earliest example of this was the development of the FORTRAN or the FORmula TRANslater language for programming scientific problems. Now there are a multiplicity of languages and packages available to handle both special and general engineering situations. Examples of these problem-oriented languages GPSS (General Purpose Simulation System) and CSMP (Continuous System Modeling Program) which are being used by the Mechanical Engineering Department and others in their research and education activities and ICES (Integrated Civil Engineering System) which is extensively utilized by the Civil Engineering Department. It has been estimated that there have been almost 1,000 different computer languages established in the last 15 years. While these languages and programs are often of real benefit to the user, they also demand extensive computer resources for their maintenance and execution so that the basic computer needed to support education and research activities is far more sophisticated than was required even two years ago.



The commercial and administrative use of the computer has shown the same type of expansion as was found in the scientific area. In this case, the computer found its initial utilization because of its ability to handle and process large volumes of information. Again, the IBM 360/40 Computer at the Computation Center can read cards at the rate of approximately 1,000 per minute, and print over 1,000 lines of 132 characters of information at the same time. Tremendous volumes of information may be stored compactly on magnetic tape or magnetic disks and can be read and written at even faster rates. The four 2311 Disk Drives attached to the computer at the Center are capable of transferring information at the rate of 135,000 bytes per second. A byte is a term used to connote a unit of information containing eight binary digits.

can be used to describe a full range of special, alphabetical and numerical characters. There are currently available a broad range of input and output devices for computer which can perform information transfer between media, some of these at substantially higher rates than those devices now used at the Computation Center. All of this means that records that might have taken weeks of intensive manual effort can be processed at a higher degree of accuracy and at a much lower cost on a computer in a matter of minutes or hours.

Almost any type of commercial processing activity is now susceptible to the computer process. For example, the entire student record processing, not only at Woreester Polytechnic Institute, but for eight other area colleges, is now being done at the Computation Center during periods when the computer

is not otherwise being utilized for research or educational activities and the records are stored on only a few reels of magnetic tape.

Like the scientist, the administrative or management information programmer is equipped with powerful languages to describe the problems facing him.

The most significant of these languages is COBOL, the COmmon Business Oriented Language, for programming administrative prob-Since these management lems. problems must cope with a wide variety of data formats, and handle a number of different types of records and files, the COBOL language is even more complicated from a Computer Science point of view than the Fortran used in scientific processing. Because of this, COBOL requires a larger and more powerful computer. The CO-BOL language was used exclusively in developing the Student Record Systems and significantly reduced the effort to make the system functional.

The evolution in the area of business has been towards the development of integrated information systems. The concept behind these systems is to minimize the amount of essential data that has to be processed and handled by human beings and to maximize accuracy, efficiency and timeliness in reports generated by the computing system.

In order to do this, the system must be properly designed. The technique of design is within the discipline of Computer Science but the same care and attention to detail are required here as with any engineering project.

The manager, and in some respects we are all managers, still demands from the computer complex the same characteristics that the scientist needed—convenience in response time and location. Response time to obtain the information needed for action while the action can be appropriately made

and physical proximity to terminals to allow convenient use of the information are now recognized as key parts of a Management Information System.

Since the manager deals with large quantities of data, this data must be stored in a unit which is accessible to the computer. early '60's saw the beginnings of low cost bulk random access storage devices and this development continues to be vigorous. Computers with hundreds of millions of bytes of storage directly available to the computer are now common. The future management oriented computer complex will have powerful input/output unit time sharing capabilities and large scale direct access files.

The third major area of the use of the computer has been in process control. Here, both analog and digital computers are finding usage. Typical of this type of system is the EAI 680 analog and PDP-7 digital computer complex used by the Electrical Engineering Department. The system, a powerful hybrid computer complex, is used for educational and research activities.

The type of system has the capability of handling analog data generated by sensing elements, analyzing it and sending out appropriate response to control units all within a small time increment. Real time computers like these actually operate in the thousandth of a second (millisecond) time range allowing large dynamic physical systems to be controlled.

Chemical plants and electrical power generator units as well as a number of military space vehicles and complexes have already come under such real time computer control.

It is clear that in the future, computer usage supported by the appropriate development of Computer Science will tend to merge all these various application areas. The scientist and engineer is more and more often dealing with problems that generate large amounts of complicated data requiring extensive files. He will also demand not only a numerical and logical ability of the computer, but sufficient input and output ability to cope with these files. In addition, he would like to, if possible, have the data logged directly from his experiments into the computer.

This indicates the computer of the near future will operate in a time shared mode, have powerful arithmetic and logical capabilities, wide band input/output channels, large scale direct access storage and analog resources. In addition, it will be supported with both general purpose programming languages and specialized problem oriented packages. It will require professionally educated personnel to support and operate it successfully. These men and women must be supplied by our colleges and universities.

Recognizing this need for both the training of engineers and scientists in the use of computers as well as professional computer scientists, Worcester Tech has recently initiated two programs; a graduate program leading to a Master's degree in Computer Science and a required Freshman course and elective. Future demands will properly require a significant expansion in offices in Computer Science. In addition, twenty per cent of the courses at Tech are now using the computer as a normal part of the work. In the Mechanical Engineering Department this figure is about thirtyseven per cent. In the future, it is expected that the majority of all courses will use the computer routinely as part of the educational experience. In fact, the futures of the computer, engineering, and engineering education are closely entwined and brighter because of each other.



Commencement Week



The week preceding Commencement Sunday was marked by sudden stillness. Seniors disappeared for a week of recreation before returning to receive the degree for which they had worked so har Occasionally an underclassman rawith slide rule in hand to a financement.

For the seniors, all was over but the formality of graduating; for the faculty and administration, the work had just begun. There were many plans to be made for the loss



"And do you remember the time Coombsie said . . ."

weekend which would not only include commencement, but the reunion of eleven classes.

The long weekend actually started on Thursday as alumni started arriving in anticipation of greeting classmates and viewing the physical plant which holds something new on every visit.

On Friday, it became very evident that there was going to be a large turnout as Daniels Hall began to fill with alumni from all across the country. After arrival many had just enough time to prepare for nine reunion dinners scheduled that night. Whether the reunion was large or small, all enjoyed the memories as only alumni can.

Reunion Day

Saturday, June 7, the on-campus activity began with breakfast and registration at Morgan Hall. It was a beautiful day, and the reunion continued over coffee on the quadrangle as alumni who arrived late had a chance to find their respective classmates. During coffee, the 50-Year Associates met and elected George R. Rich, '19, their new president. It was the second such honor for George, as he had been elected president of his class on the previous evening.

Class pictures were then taken prior to the luncheon. It was interesting to note that the class of '29 had discarded their hats and canes and wore large (six-inch) lapel buttons with their year in large numerals. After pictures, all assembled in Morgan Hall for the annual reunion luncheon which would conclude the formal activities for the day.

The invocation was given by Herbert M. Carleton, '08, and the luncheon was served. After his opening remarks, Robert E. Higgs, '40, newly-elected president of the Alumni Association, introduced President Storke.

This was the last address that President Storke would make to the

Alumni Association due to his retirement in July. He discussed the college in general, referring to the large incoming freshman class and the new Stoddard Residential Center set for completion in 1970. spoke of the rise in female enrollment, of the progress of the planning group and planning day, and he announced the decision of the Board of Trustees to make R.O.T.C. completely voluntary. He took this opportunity to look back on his seven years of service at Tech and thanked the Alumni Association for their continued support.

The annual Alumni Meeting was then held. Warren B. Zepp, '42, submitted the Secretary-Treasurer's Report, which was duly made, seconded, and accepted. There being no further business, President Higgs adjourned the meeting, and the presentation of awards followed.

First of the presentations was the 50-year diplomas by President Harry P. Storke and Dean Martin C. Van de Visse.

Dr. William E. Hanson, '32, Chairman of the Board of Trustees, presented the Robert H. Goddard Award for Professional Achievement to Walter B. Dennen, '18, Michael C. Sodano, '31, and John L. Brown, Jr., '46.

The Herbert F. Taylor Award was then presented to Daniel F. O'Grady, '30, for Distinguished Service to the Institute. President Robert E. Higgs made the presentation.

Next on the program were the class messages. Class Gift Chairman Robert C. Sessions, '19, represented his class, which donated over \$70,000 to the Institute. The Class of 1944 was represented by Irving James Donahue, Jr. The 25-year class donated \$4,000 for use in the George C. Gordon Library. The graduating class, represented by class treasurer James Atkinson, donated \$100 to the Alumni Association and \$500 to the school for the improvement of the quadrangle.

Warren B. Zepp, '42, then pre-

sented the Class of 1917 Attendance Cup to the Class of 1919 for best attendance on a percentage basis.

Congratulations to six of our alumni who travelled over 3,000 miles to attend their respective reunions. There were five who came from California: Jacob J. Hagopian, '39, John W. Hughes, '39, Frans E. Strandberg, '39, Richard B. Wilson, '39, and Richard Walberg, '23. One alumnus, Michael C. Sodano, '31, traveled to Worcester from Yokohama, Japan.

The formal activities then closed with the singing of the Alma Mater, and the Benediction given by Herbert M. Carleton, '08.

For many, the day was not over. Several attended the R.O.T.C. Commissioning Ceremonies held in Alden Memorial Auditorium. Brigadier General Bernard W. Rogers, Commandant of Cadets at West Point, presented commissions to 27 new second lieutenants.

There were still two reunion dinners scheduled for Saturday night. The 25-year class held its dinner at the Franklin Manor. The 40-year class, which met at the Publick House in Sturbridge, was fortunate to have Prof. Kenneth G. Merriam, MS '35, speak at its reunion. Prof. Merriam, who had also spoken at '29's tenth reunion, helped bring back many fond memories of faculty and the aero option which was the theme of the reunion.

These two reunions marked the end of all organized alumni activities. Still, many alumni remained to watch the Commencement ceremonies and welcome the new alumni into the Association. The end of the alumni activities, which marked the beginning of graduation activities, marked only the end of tangible meetings. All who came to the Reunion left with a better feeling—a feeling of renewed friendships and fond memories they again realized would never be forgotten.

Saturday evening marked the beginning of Commencement activi-

Table hopping was a common occurrence





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Traditions will never be broken.
Pomp and Circumstance and dignity will always be characteristic of Graduation.

ties as members of the senior class gathered at the Yankee Drummer for the annual semi-formal dinner dance. Bob Nelson and his Orchestra provided the music.

Sunday, June 8, was the day that 270 eager seniors had been awaiting for what seemed at the time forever, but now looking back seemed very short. This was the day when seniors were proud but parents were more proud. It was a time for pomp and circumstance. It was the culmination of four short but most important years.

Baccalaureate

The day's activities started the way in which they should, with Baccalaureate Services held in Alden Memorial Hall at 10:00 a.m. The Baccalaureate Sermon was delivered by Rev. Timothy J. Harrington, auxiliary bishop of the Roman Catholic Diocesc of Worcester.

Bishop Harrington opened his sermon by noting the great advances made by man and particularly the United States in the past generation. He then turned to one of the largest problems facing the U.S. and the world today—poverty.

He stated, "We have islands of affluence owned by a minority of the world and vast seas of poverty, misery and hunger surrounding these small islands of wealth."

He continued describing the conditions under which the poverty-



stricken live and then stated, "But the worst thing of all is that they live without hope, ves, hope. Poverty is a corroding acid that attacks the human spirit."

"There is a world of difference between being poor and being broke. Spiritual bankruptcy rather than material bankruptcy seems a source of the many great social maladies of our times," he added. "It is easier, to be sure, to give the ragged man a dime than to give him hope, opportunity or the beginnings of a new life. We make a grave mistake if we define man as povertystricken only in terms of dollars. There is much more to it. Still, we tend to take the money approach. We dress his body free of charge, but we forget his heart. We end the hunger in his stomach free of charge but we forget his hunger for security, for peace, for dignity."

He concluded by charging the senior class to become a part of this critical phase in American history.

"You graduates of 1969, your brothers who are poor are waiting for you. Don't forget them!"

Graduation

The high point of Commencement arrived as the faculty donned their brightly-colored academic hoods and led the procession into Harrington Auditorium. Dean Richard F. Morton, Marshal, and Prof. William R. Grogan, '46, Honorary Marshal, led the procession. After the invocation, given by Rev. Dr. Wallace W. Robbins, and the National Anthem, President Harry P. Storke introduced Gov. Daniel J. Evans of Washington, who delivered the principal address.

Gov. Evans urged the graduates: "Instead of manning the barricades on our campuses, go into the streets and use vour educational skills to make education work on the festering problems of our 20th century America.

"There is where you are needed," said Evans. "This is where America cries for help. This is where the action is."

Keynote speaker at last year's Republican National Convention, the 43-year-old Evans said education must end the danger of "intellectual isolationism" by joining business and government to find "common ground" to correct failures "which are everywhere apparent" in America.

"Whether we succeed or fail is largely up to you," Evans told the graduates, adding, "If you do choose to 'opt out'-to become the generation with a cause but with no commitment—then I believe this nation is in deep trouble.

"But, if you take your cause into society—and not out of it; if you display the same courage in positive action as you have shown in dissent, then I believe this nation can hope once again.

"Let the students and the graduate students of architecture work on the real problems of our urban community while they are in school, rather than the sterile theoretical projects of an academic Valhalla.

"Let the engineers help to rebuild; let the medical students help to devise a new delivery system which will bring adequate health care to urban poor.

"Let the great liberal arts tradition be used to bring new light and understanding and hope to the faceless and nameless dwellers of our shameful slums.

"Above all," added Evans, "whatever else it does, this generation should continue to be the conscience of the nation."

Evans charged colleges and universities today are "in danger of intellectual isolationism—a retreat from the world of reality into an academic ivory tower remote from the challenges of society."

He said if we challenge our students to become reinvolved in the problems of social progress, we must challenge the university to do likewise, adding, "I believe the colleges and universities of this nation must make a greater effort to become directly involved in urban America."

Evans then called for creation of urban campuses across the nation, and for universities and colleges to create graduate study programs in urban affairs.

He said both government and private enterprise need people who understand the problems of urban environment and urban transportation and the economics of welfare, and the schools must provide them.

Evans said those who look at today's eampus with "both disgust and disdain," fail to see behind the turmoil and the unrest "the beginning of a new order, a new and profound concern for society and-with it—the nation's new hope for a better world tomorrow."

Out of the campus unrest, Evans said, "We really have found a generation which is willing to stand up and be counted, a generation which does believe in something, a generation which is not afraid to be our critic, or afraid of the consequences. And that is something not to fear, but to be coveted."

At the conclusion of Gov. Evans' address, President Storke presented degrees to 270 undergraduates and 43 eandidates for Master of Science. The highest academic degree, Doctor of Philosophy, was awarded to 11 men. Twenty-five men from local industry were awarded certificates for completing four years of evening study in Tech's School of Industrial Management.

Six honorary degrees were conferred by Dr. William E. Hanson, '32, Chairman of the Board of Receiving Honorary Trustees. Doctor of Engineering degrees were Gov. Daniel Jackson Evans, Arthur E. Smith, '33, President, United Aircraft Corp., and James E. Smith, '06, founder, The National Radio Institute.

Those receiving Honorary Doctor of Science degrees were Robert D. Harrington, President, Paul Revere Corp., and generous benefactor of the Institute, Dr. C. Lester Hogan, President, Fairchild Camera & Instrument Corp., and Very Rev. Raymond J. Swords, S.J., President, Holy Cross College.

President's Address

Next on the program was President Storke's message. stillness once more was evident, for all present knew this would be a farewell message.

"Change, we hear, is in the air. So let's change this routine, at long last. Instead of a message to the Graduating Class, by this very Lame Duck President (at this moment standing on his 'last leg'), may I take a bit of license, in the modern spirit of 'self-determination'?

"I prefer today to join with my classmates of 1969 in a farewell message to Worcester Tech.

"Our Ahna Mater song well says it:

"Long have we felt thy guiding

Thy teachings broad and free;" and, I go on:

"With praises loud in every land, We'll show our love for thee."'

"Yes, you and I have all tasted,

and—one hopes—we have all partaken profitably, of the best that Worcester Tech has had to offer by administration, faculty, donors of financial aid, other family and community friends. These recent vears have had their ups and downs, but with 'ups', I think, predominating, as Worcester Tech has been in the pulsating throes of changing with the vitality of our fascinating times. I predict that, as some of us approach the age of thirty-and indulgence in retrospect thereupon becomes our privilegethat 'best' will burgeon wider and more lastingly in the small, very select, highly competitive, range of superiority. With it, of course, will grow our pride that our Alma Mater made so much available to us, gave so richly to us, provided us so many worthwhile experiences in 'growing up.' In return she asks but for our happiness, our success, our loyalty, our support. However, she hopes fondly that today-and through the many tomorrows, as we challenge confidently our problems in the seething world which we face -we can ever say, honestly, simply: 'We are making this place a better place because we are here.'

"To you we are deeply grateful for so much, Worcester Tech.

"Now, may God grant that the good works for which Boynton Hill is rightly well known and esteemed continue, to the fullest benefit of those countless aspiring Worcester Tech students of the years to come ...

"... as our Worcester Tech goes on and on . . . "

Upon completion of this message, President Storke received a welldeserved standing ovation which lasted until he returned to eeuter stage and threw a snappy military salute to the audience.

After the Benediction by Rev. Robbins, the new alumni retired to the quandrangle for a reception and the traditional picture taking. Another successful Commencement had ended.



This was the day for smiling.



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From left to right: Arthur Smith, Robert Harrington, James Smith, Pres. Storke, Gov. Evans, Dr. Hogan, Very Rev. Swords

Honorary Degrees

Doctor of Engineering Governor Daniel J. Evans Arthur E. Smith, '33

Doctor of Science Robert D. Harrington Dr. C. Lester Hogan James E. Smith, '06 Very Rev. Raymond J. Swords, S.J





The Robert H. Goddard Award Walter B. Dennen, '18 Michael C. Sodano, '31

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John L. Brown, Jr., '46

The Herbert F. Taylor Award Daniel F. O'Grady, '30

Above, the Robert H. Goddard awards presented by Dr. William E. Hanson, left, Chairman of the Board of Trustees. Below, the Herbert F. Taylor Award presented by Robert E. Higgs, '40, left, President Alumni Association.

Tech Alumnus—1969 Version

The typical alumnus of today is markedly different from the alumnus of just a decade ago. The W.P.I. graduate of today is far more concerned and involved than his predecessor.

We believe that this increased participation and acceptance of responsibility is the result of a two-way interaction:

- 1. The role of our Alumni Association is now one of continuous activity and responsibility. It is the kind of organization that attracts responsible people who want to make significant contributions to worthwhile causes. To serve the cause of higher education is one of the most needed personal contributions in the world today.
- 2. The influx of intelligent, active, and responsible alumni volunteering to work for our Association has promoted its growth and made possible our acceptance of greater and more diversified responsibilities.

Long gone are the days when each of us, as an individual alumnus, heard from the Alumni Association only once a year—at Fund Drive time. Now we are aware of the many additional ways in which individual alumni can, and must, participate and assist. Each of us is hearing from the Tech Alumni Association many times each year with a variety of challenges and opportunities.

Involvement in alumni activities is fun, and only through personal experience can you appreciate the rewards of being a "Tech Alumnus—1969 Version." Today we have constantly increasing numbers of your classes and chapters working on such important functions as: Student-Alumni Relations; Faculty-Alumni Relations; Alumni Fund; Admissions (Prospective students); "The Journal"; Alumni Placement; Chapter Programs; Redistricting; Council representation.

To whatever extent your time and energy permit, we urge you to increase your participation in Alumni Association affairs. You will soon see why the number of whole-hearted supporters is steadily rising; and why personal conviction leads to greater and greater financial and non-financial contributions.

Robert E. Higgs, '40



Trustees Meet

Vote R.O.T.C. Voluntary

The Board of Trustees, at its annual meeting on June 7, voted to make R.O.T.C. an elective course effective next fall. Last year at this time, they had voted to reduce the required amount of work in this course from two years to one. Further, they delegated to the faculty and administration the responsibility for determining the credit allowed for course work in military science.

In May, the student body, in a referendum, had indicated their overwhelming opinion for the elimination of R.O.T.C. as a degree requirement. By a slight margin, they voted in favor of retaining some academic credit for the course.

Also during May, the faculty had voted for a voluntary program, by a margin of 102-37.

The length of an R.O.T.C. orientation program for all freshmen was also left to the administration.

The Board approved a recommendation to replace the existing IBM 360/40 computer with an RCA Spectra 70/46. The new unit, to be installed this summer, will have a time-sharing capability for as many as fifty remote stations. The Worcester Area College Computation Center, located in the Gordon Library, will be responsible for this new instrument.

Approval was voted to increase available scholarship funds for next year by \$100,000.

New members elected to the Board were Dr. Edward R. Funk, '46B, and Howard G. Freeman, '40. Funk is Professor of Welding Engineering at Ohio State University in Columbus and President of Cambridge Metallurgical Corp., Boston. He was elected a term member. Freeman, who was elected a member-at-large, is President of Jamesbury Corp. of Worcester.

Re-elected as term members of the Board were John E. Hossack, '46, Vice President of the American Appraisal Co. of Milwaukee, Wis., and Albert M. Demont, '31, Manager of Professional Manpower Development at the Research and Development Center, General Electric Co., Schenectady, N.Y.

Robert D. Harrington, life member of the Board, was appointed to the Executive Committee.

In his final report to the Board, President Storke said, in part:

"I shall leave office at the end of this college year with the knowledge that my successor gives every indication of being an ideal choice to lead Worcester Tech on to new heights in higher education. Dr. George W. Hazzard deserves, and I know will receive, the finest support from the Board of Trustees. His selection was an important milestone for Worcester Tech, for it involved for the first time representative segments of the campus community: trustees, students, faculty, alumni, and staff. No one in those groups can ever say that he didn't have full opportunity to contribute his bit in the selection of President No. 11.

"For my part, I repeat simply: I am happy to be turning over my rewarding responsibilities to Doctor Hazzard. I think he is the educational leader whom Woreester Tech needs as its eleventh President.

"I wish that more trustees could

have found time to share with us the wonderful experience of Planning Day on April 16. Eight separate discussion sections of stufaculty, administration, alumni, and trustees gave serious, constructive, and imaginative consideration to the long range future of Worcester Tech. Basis for their deliberations was the comprehensive preliminary report of the President's Planning Group, which had done a masterful, rush-order job of probing into the entire fabric of the college, touching on both our strong and weak areas. Their initial task was not to make decisions or firm recommendations, but rather to evaluate Tech as it is today and to present points for broad discussion later. The focal point of Planning Day was the list of a dozen possible over-all objectives toward which the college might work.

"In accordance with those ground rules, no specific conclusions were reached. Rather, recorders at each session compiled complete notes on the many fine ideas and points of view discussed, which were turned over to the Planning Committee. They, in turn, will correlate the notes in preparation for summer work and a second report, which will be issued in September prior to a second Planning Day. Final recommendations are expected by June of 1970. This, you must admit, is a formidable task, but well worth the most dedicated efforts of all.

"Perhaps the widest comment at the conclusion of Planning Day was that from faculty, praising the important contributions of the 150 students who had so eagerly participated. It was most gratifying to hear this universal compliment to our students and at the same time a little sad to sense that their interest, reasonable approaches, and constructive observations should come as such a surprise to so many people who work with them every day. We have always looked on our

new graduates as maturing young men, who would be well qualified to take their places in the world. Yet surely they must reach that stage of their development sometime before June of their final year in college, because there is no magical power in the legalistic words which are intoned at their Commencement or inscribed on their diplomas. It could just be that many of us older timers are still underestimating the capacity and the potential of the young undergraduate student of today.

"In the summary comments of the committee's first report, they emphasized one of Worcester Tech's greatest assets; 'Our student body is definitely ahead of most others academically and in creative citizenship, and these assets should be used more in framing our image.' Surely in these days when campus turmoil seems to be the major news of the day, we should be very proud of a student body which has so thoroughly entered into the cooperative spirit of evolutionary planning for a greater Worcester Tech.

"And so we come to the close of this final Storke epistle to the trustees. Originally, the letter was sent only to members of the Board; for several years, a copy has been sent to all faculty and administration and to the Tech News, so that its information could receive the widest possible distribution through the entire campus; also, copies are sent to alumni chapters. There are very few matters of interest at Tech which cannot and should not be communicated to all interested people. The open book is necessary to real progress. The more we all understand, the better we can all cooperate proudly, always ready to appraise ourselves, always anxious to take fearlessly those positive steps which our future success demands. This is the spirit which abounds on the Tech campus today, I believe. I feel sure that it will go on and on.

"And so, I am certain, will Worcester Tech."

The Alumni Council

Robert E. Higgs, '40 Elected Association President

A new Register of Membership will be published by the Association in 1970. This was authorized by the Alumni Council at their annual meeting on Friday, June 6. More than 35 delegates and officers were present.

Elected President of the Association was Robert E. Higgs, '40. Also elected as members-at-large of the Executive Committee were Charles C. Bonin, '38, and Francis S. Harvey, '37. Re-elected as Vice President was Rafael R. Gabarro, '51, and as Secretary-Treasurer, Warren B. Zepp, '42. Higgs succeeds Arthur D. Tripp, Jr., '36.

In his report to the Council, Tripp called for increased efforts to involve larger numbers of alumni in the programs of the Association. He singled out the chapter meeting programs as an area needing attention.

Higgs is the Manager of National Order Handling, Systems and Data Processing, for the Electronic Components and Devices Division of RCA. He is headquartered in Edison, N.J. He was a member of the Alumni Fund Board from 1958 to 1966 and was elected a memberat-large of the Executive Committee in 1968. For many years he helped on the Alumni Fund, including keyman, in the Northern New Jersey Chapter. He has also been active in the Techni-Forum program and as an alumni admissions counselor.

Bonin is President of Chemical Construction Corp., a subsidiary of Electronic Bond and Share Co. He was elected a member of the Board of Trustees in 1967. Previously, he served first as a member-at-large of the Executive Committee of the Alumni Association from 1964–66, and then as a Vice President from 1966–68.

Harvey, who is also a member of the Board of Trustees, elected in 1966, is President and Treasurer of Harvey and Tracy, consulting engineers in Worcester. He has been active in the Worcester County Chapter and the Alumni Council. He served as a vice president of the Alumni Association from 1965–67. He is a member of the college's Ad Hoc Committee on admissions.

A highlight of the meeting was the presentation of a portfolio of congratulatory letters to President Storke on the occasion of his retirement. In addition, he was presented with a portable color television set and a portable tape recorder.

In his report to the Council, the president stated that, in his considered judgment, his successor, Dr. George W. Hazzard, is the right man for the college at this time. He noted that he had made only three or four suggestions to his successor. Among them was one of interest to the Council. He stated that he recommended that in the

Continued on page 41



And some said it couldn't be done.

265 Attend New York Chapter Meeting

Would you believe that an alumni chapter meeting could draw an attendance of 265 people? Well, the New York and Northern New Jersey Chapters combined their efforts to achieve this outstanding attendance record.

Faced with a waning interest amongst its alumni members, the New York Alumni Chapter, under the superb direction of President Stephen J. Spencer, '49, decided to stimulate some enthusiasm. An executive committee brainstorming session resulted in the mailing of a questionnaire to determine what activities would appeal to the membership.

One of the most popular choices selected by the members was for a dinner meeting at the United Nations. The initial attempts at arranging the meeting were met by rebuffs from U.N. staff members who stated that their facilities were not available to outside groups. However, it was determined that at some prior time one outside group did manage to hold a meeting

there. That group was the Harvard Business School Alumni. We were determined to be the second meeting group allowed, and through the intervention of a common friend, we were able to solicit the assistance of the Ambassador from Saudi Arabia, Jamil Baroodi.

By his political influence, Mr. Baroodi gained our admission to the U.N. facilities for a dinner meeting, and he consented to be the guest speaker covering the topic of the current Middle East situation.

However, there was one stipulation; we were to provide a minimum of 200 people at \$11.00 per person and it had to be a weeknight. This was quite a challenge, and we asked Norm Taupeka's Northern New Jersey Chapter to collaborate with us in this endeavor. The result was an outstanding success as 175 alumni, wives, and sweethearts plus 90 guests turned out for the event. Alumni from the far areas of Long Island, New Jersey, Connecticut, and Ponghkeepsie drove the many miles to Man-

hattan to support this significant happening. Recent graduates were in abundance, and both the younger set and old grads had happy reunions with schoolmates they had not seen in some time.

Ambassador Baroodi, who was one of the founders of the Human Rights Commission, has been at the U.N. since its inception. His vivid interpretations of the history and problems of the Middle East eaused some lively pro and eon comments by the audience. spirited question and answer period resulted in some stimulating participation by members of the gathering. Prominently in evidence during the talk was the NBC Television News eamera erew who filmed the speech. Also conspicuous was the photographer from United Press International who took flash pictures throughout the evening.

The meeting was so successful that a similar one is being contemplated with an Israeli Representative as the main speaker, or possibly even an Arab-Israeli debate.

A Few Suggestions and Thoughts on Programs for W.P.I. Alumni Chapters Throughout the Country

by
Stephen J. Spencer, '49
Chapter Programs Chairman

Because of the success of our United Nations meeting this past winter, I was asked to accept the newly created post of Chapter Programs Chairman. I was told that this would consist merely of making suggestions to the Chapters on how to improve their program meetings and boost attendance. And that is all that this Chairmanship could provide by remote control.

There is no pat formula that I know of for a successful program. The following, however, are a few suggestions which I feel are a must for a good program!

1. Dues Increase Chapter dues to \$5.00 per year. A Chapter cannot function properly today on \$2.00 and \$3.00 dues of the past. The extra money is necessary for mailing costs alone.

In New York after a close vote, where the dissidents argued that an increase to \$5.00 would drive away at least half of the dues paying members, the New York Chapter increased dues to \$5.00, beginning the 1968–1969 year. The results were most gratifying. The dues paying membership doubled and the Chapter treasury nearly quadrupled.

2. Contacts A Chapter member must have the feeling of belonging. He likes and wants attention. Increased contact with the Chapter member other than just fund raising will give him this feeling. Frequent contacts should be made via letters, by telephone and in person.

- 3. Questionnaire A beginning point for this contact should be a questionnaire asking for yes and no answers and suggestions from the membership for a better meetings program.
- 4. Newsletter Post the results in a newsletter and continue to send out a newsletter after every meeting informing the membership on the doings of the last meeting and list the names of those who attended. Relate the highlights of the principal speaker's talk and tell them something about the next meeting coming up. This newsletter can be expanded to provide news and happenings of Chapter members.
- 5. Meetings Plan about four (4) meetings a year. Begin immediately with a luncheon meeting, then a ladies' night dinner meeting in mid-winter, followed by another luncheon meeting and ending with a ladies' day spring meeting.
- 6. Current Events Make your mid-winter meeting your most important. Choose a current events topic. Choose a non-technical subiect. Choose a controversial sub-The more controversial the ject. Make this a combined meeting with an adjacent Chapter if possible. Set up tables of 8 and 10 persons and give members the opportunity to organize their own table of friends and guests. courage them to bring friends.
- 7. Charge Don't be afraid of the charges per person. If the program

is good and pushed hard, the members will pay. The charge for the U.N. meeting in New York was \$11.00 per person. Set up reservations with payment in advance.

8. Young Alumni To attract younger members, appoint one man from each class to contact his classmates for a reunion at each meeting. For example, at the first meeting have a reunion for the classes of 62-63-64. The next meeting 65-66-67, etc.

For last year's graduates, obtain the new names and addresses from the alumni office and invite each new member free of charge to the next meeting. Inform him of the other members of his class who are being contacted. Give each new member a feeling of knowing someone at the meeting.

9. Publicity Arrange for pub-The more publicity the better. Get W.P.I. alumni in the news through your local papers as well as the international press. Coordinate this publicity with the publicity offices on the Hill. Let's get the world to know that Worcester Tech is in Worcester, Mass., and not in Wooster, Ohio. This in itself will personally benefit each alumnus and will make us more proud of being graduates of Worcester Tech. Thus with this pride it will help to make our fund raising easier and increase fund totals yearly.

Undergraduate Viewpoint

Impressions of Spring

by Howard H. Shore, '69

This time of year normally elicits ecstatic sighs of relief from graduating seniors. Now that the college grind is over, the Tech graduate will be able to look back on his educational experience and tell his successors with confidence, "Aw, it was easy." But, of course, once is enough. The important consideration is that with his new degree, Joe Tech can now forge his way into society with hopes for future happiness and prosperity.

At least that's the way it should be. Unfortunately, things are not quite that simple. One senior informed me, "It's too bad I couldn't take the job I really wanted, but I had to grab the best opportunity I could to avoid the draft." Although not universally true, it does appear that most seniors going into industry (and not receiving an R.O.T.C. commission) have taken jobs that are reasonably safe from military interference. The lot of the seniors bound for graduate school is much different. the change in policy that previously allowed for deferments for students in advanced degree programs, they probably face the worst dilemma of their lives. Some have taken temporary draft-safe jobs as teachers, a few contemplate going to Canada, many just don't know. Now that the moment of truth has arrived, previously apathetic undergraduates have taken a sudden interest in the future of the war. As one senior noted, "The sad effect of the whole mess is that the normal exuberance of happiness found in graduating seniors is conspicuously absent in this year's crop."

The April 16 Planning Day sponsored by the President's Planning Group was an interesting experiment in brainstorming. The purpose of the day-long venture was to assimilate as many ideas as possible concerning the future of the Institute. The faculty participation was outstanding; the student participation, although light statistically, was hailed by the Committee. Both students and faculty were pleased with the opportunity to engage in personal discourse about something other than course work. Professor C. William Shipman, Chairman of the Planning Group, said, in a letter to the Tech News, "At a time when other campuses are rocked by the turmoil of unreasoned confrontation, we can all be proud that frank and constructive criticism is the way at Worcester Tech. Surely where we have such a demonstrated well of talented good will, our efforts to 'make our good college an excellent one' have every chance of success."

With the planning operation successfully initiated, the coming year offers great hope for more profound change on The Hill.

Even the graduate students have reacted to the spirit of change now permeating the campus. Some postgrads, evidently feeling a need for their involvement in the affairs of the predominantly undergraduate student body, have formed the Ad Hoe Committee for a Graduate Student Council. The Committee states, "We have had some positive

indications that representatives of a Worcester Tech Graduate Student Council would be welcomed to take an active part in the work to determine the future course of W.P.I. Further, the availability of our services and the nature of our concerns would be made known to the individuals and committees of the administration, alumni, faculty, and undergraduates by such a graduate student council."

A recent student referendum on R.O.T.C. has stimulated more debate on this national collegiate controversy. In the preferential balloting, students voted to make the program completely voluntary with no academic credit. Running a close second was the proposal to make R.O.T.C. voluntary, but with The final disacademic credit. tribution of the preferential votes showed 413 students in favor of a voluntary program with no academic credit, while 337 voted for a totally voluntary program with a short introduction period and academic credit. The results of the referendum are not surprising in view of the increased national trend to separate the military from academic life.

Whatever else can be said about Tech undergraduates, they cannot be accused of lack of business initiative. On April 7, the Hog's Head Concession opened its doors for business in Morgan Hall, selling cooked food, beer, and whiskey. The three students masterminding the operation evidently felt an increased need on campus for more personalized culinary service. Alas, the venture was short-lived. The business was terminated by some unimpressed dorm counselors, and its purveyors were prosecuted by the Student Court. Notwithstanding Dr. Goddard himself, Teeh will long remember these three conrageous entrepreneurs whose dauntless business enterprise has earned them a permanent place on the bad conduct rolls of W.P.I.

William R. Grogan, '46

Named Outstanding Teacher

A man of many interests has been presented with the 10th Board of Trustees Award for Outstanding Teaching. William Robert Grogan, '46, Professor of Electrical Engineering, and chairman of the college's curriculum committee for the past three years, was chosen by a committee of faculty and students.

Characterized by his deep concern for the welfare of his fellow man, Prof. Grogan has, over the years, displayed a versatility of interests. His citation readily details his varied activities both in and out of the classroom.

Upon receiving the award at the annual faculty dinner on May 12, he attributed much of his success to the influence and inspiration exerted on him by his longtime colleague, now retired, Prof. Hobart H. Newell, '18. Prof. Newell received the same award in 1960.

Except for service in the Navy, in which he held the rank of Lt., Prof. Grogan has been a member of the faculty since graduation. He was appointed a professor in 1962.

CITATION

William Robert Grogan, Professor of Electrical Engineering, has for many years shown himself an outstanding W.P.I. teacher, a counselor ever ready to help students, an inspiring leader in his own department and in the school itself, and a prime mover in joining the academic and industrial communities.

In the classroom Professor Grogan teaches in an exceptionally orderly and systematic way. He relates each detail of a subject clearly to the subject's structure; he knows exactly how to present that detail in the most comprehensive manner. He leads in developing and using training devices to increase teaching and learning effectiveness. He has keen insight into what is going on in his students' thinking. He establishes quick and effective rapport with his class.

Outside the class he is generous with his time in helping individuals and living groups in his subjects and in advising student activity groups. He was president of his national fraternity one year, devoting most of his weekends to flying around the United States to hold airport chapter meetings.

Over the past ten years he has developed an outstanding course in Engineering Economy including group design and development projects with dollar-orientation. He has recently extended this course to include actual projects from nearby industries with direct student practicing engineer contact. Engineering managers help evaluate student solutions.

His numerous contributions to his department and the school include chairmanship of an Electrical Engineering Department Committee continuously developing and improving the curriculum, chairmanship of an Institute Curriculum Committee with resultant radical innovation to include the first available curricula beyond traditional engineering and science, producing a teaching theory and methods seminar for the entire faculty. During these years he has also found time to act as a consultant to the United States Navy on the implementation of a shipboard missile system including related personnel problems, as a consultant to Bell Telephone Laboratories on the development of technical personnel and graduate education progress, and as a consultant to the General Electric Company.

His activities bring great credit to himself, to Worcester Polytechnic Institute, and to the teaching profession. The Faculty Award Committee therefore cites Professor Grogan for distinguished service and for distinguished excellence in teaching and designates him recipient of the 1969 Faculty Award.



K. G. Merriam Retires

For more than 45 years, since the last years of President Ira Hollis' administration, Prof. Kenneth G. Merriam, MS '35, has been a distinguished member of the college's mechanical engineering department. Countless students remember his deep, sonorous voice; at times booming out in commanding tones, on other occasions so low in volume that one would almost have to strain to hear a word, and yet all calculated to add

the proper emphasis and heighten the process of learning for which he is so well known. With the end of this academic year, Prof. Merriam is retiring.

"I guess the one thing I will miss the most," he said, "will be simply working with students. After all, they are really what teaching is all about. I have always felt concerned about a student's welfare—particularly those less able. So I've always kept the 'heat' on

them, especially in the basic mechanics courses. These courses are fundamental. For an engineer to be competent, he must not only have learned this material but also the discipline of his mind. This latter aspect is perhaps even more important."

What about our current crop of undergraduates, we asked. Have we cause for concern? "I don't think so," he replied. "Remember, what we read about in the papers only represents a small minority. It's the great silent majority of students whom we should think about. In my courses our students continue to do a competent job and the top ten percent may even be better than their predecessors—although we won't know the answer to that for 10 or 20 years."

When we asked about his most satisfactory experience, "K.G." relit his pipe and pondered for a few moments. "I can't pinpoint any one thing," he said. "Certainly working with the many students who took the aero option during the 30 years we offered it here in the M.E. Dept. was rewarding. But I think of something more than that program ... it's rather simple, yet difficult to convey in words-but what I believe has been my most satisfactory experience has been my association with the college during this period. The students, my colleagues on the faculty, the courses I taught: these are all part of it-but what I refer to is something more.

"You know, at the conclusion of World War II every faculty member who had left the college to enter the service returned to Tech. That's quite remarkable. I remember asking Harry Feldman of the Chemistry Dept. about it—he said, 'I guess it's a way of life here at Tech.'

"The college has always had integrity and high standards. And the college has always backed its faculty. Without any pretentiousness, W.P.I. has quietly fostered what has been a policy of academic freedom at its best. There are not many colleges which, when looking back on the last 45 years, can make that statement."

While we talked with K.G. (whom we, along with many of you, had enjoyed in class), it occurred to us that with his retirement another of the tenuous links with the past was being severed. The daily quizzes in his courses, the note-book that each of us kept, the periodic conferences with him in his office, the feeling of respect and willingness to work a little harder than we normally would; all of these thoughts crossed our mind. And we also thought of all the many, many students whom he has

helped educate. They are, in a way, an extension of this man in the world today. And, although we didn't say it to him (for we know him well enough to know he would prefer it otherwise) we thought that in manner singular to him, he is perhaps influencing our society far more than either of us realized.

Robert D. Behn, '63, Edits New Book

Robert D. Behn, '63, is a versatile alumnus of many talents. After receiving his degree in physics from the college in 1963, he went on to study at Harvard University, where he received his masters in engineering in 1965 and his Ph.D. in decision and control in 1968. Since that time he has been research director and a member of the National Governing Board of the Ripon Society. It is in this latter capacity that we write of him today, for he has just edited a book entitled The Lessons of Victory, published by Dial. Quoting from the book review which appeared in the New York Times on April 26: "The Lessons of Victory, an investigation in depth by Republicans of the campaign of 1968, makes that campaign more exciting than it is in memory, and than it was, I suspect, in fact... For the analysis of the race, from the stirrings of the contenders . . . the speeches made (and not made), the strategy and tactics all make for fascinating reading, not merely as history, but as a chapter in the American art of politics. If you followed the campaign at all last year, you will find the Ripon Society's recapitulation an interestladen document, much like a travelogue of a city you have visited

and recall vividly... The Ripon Society was founded in 1962 in Cambridge, Mass., by a group of Republicans to provide 'the GOP with political ideas that contribute to the American dialogue.'

"The Lessons of Victory, written, incidentally, by various hands, deals very little with victory. It's not a cry of 'Look, how we beat them,' but a wry comment on 'Look, how we almost blew it.' The authors are troubled by the fact that the enormous advantages that the Republicans had at the start did not yield comparable results at the end. It wasn't that Americans didn't

want change, they say, as that they began to feel that Nixon couldn't give it to them. . These subordinate themes as well as the major ones are explored with shrewd judgment and an insider's knowledge of the facts in this penetrating study."

Bob continues his interest in W.P.I. He has served this past year as program chairman for the Boston Alumni Chapter and is also currently treasurer of the Cluverius Society, the Alumni Interfraternity Council of the college. He and his wife, Judith, are living in Cambridge, Mass.

Holbrook, '44, Aids Research

A grant of \$25,000 to establish a research program at the college has been donated by Harrison E. Holbrook, Jr., '44, his brother, Kenneth W., and his sisters, Miss Gertrude L. and Mrs. Phyllis V. Ervin. The grant honors their late father, Harrison E. Holbrook, Sr., founder of H. E. Holbrook Drop Forge Co., Worcester.

The announcement was made by the Forging Industry Educational and Research Foundation, whose prospective educational and research work the grant will support. The foundation will handle the disbursement of the funds to Worcester Tech.

Harrison E. Holbrook, Jr., '44 is a native of Worcester. He majored in mechanical engineering at the college.

Since graduation he has worked at his father's firm, becoming president and treasurer in 1958. The company became a division of Providence Steel and Iron Co., Inc., in 1968. At that time, Holbrook became scmi-retired and took up residence in Marco Island, Fla.

Alumni Fund Sets New Record

By the time alumni will read this story, the 1968–69 Annual Alumni Fund will be history. As we go to press, the totals are \$119,-824.61 from 2,976 contributors. In addition, some \$14,212.82 in corporate matching gifts can be added to the amount raised.

When compared to the previous fund in 1967–68, the past year's effort will represent a gain in both dollars and donors. Last year's total was \$125,850.24 with some 2,713 alumni contributing.

"This support comes at a time when unrest and campus disturbances are sweeping the country. Thus it is doubly important in that it illustrates the depth of loyalty of W.P.I. alumni," said Irving James Donahue, Jr., '44, Chairman of the Fund Board.

"We cannot rest on our laurels," he continued. "The needs of the college are very great. Scholarship aid continues to be a problem. It is in this area that alumni have traditionally aided the college. In next year's fund we hope to be able to increase our support."

The latest totals indicate that the Pittsburgh Alumni Chapter continues in the lead. More than 57% of the alumni living within the chapter have contributed to the fund. The chairman of the program is Donald M. McNamara, '55.

Following Pittsburgh is the Rhode

Island Chapter, with 48% participating, and the Cleveland Chapter, with 43%. The respective area chairmen are Otto A. Wahlrab, '54, and David A. Pratt, '56.

Class totals were not available at press time and will be covered in the next issue.

Chairman Donahue noted one disturbing aspect; namely, the drop in percentage of alumni contributing to the fund. "We know that in 1963-64, the last fund before the Centennial Fund, some 46% of alumni participated. In the first program after the Centennial Fund, last year's program, 30% contributed. This past year the figure will be over 30%. Obviously, something has occurred in those intervening years, 1964-67, that has caused this percentage drop. Frankly, we are not sure what is the cause. We would welcome any thoughts that you may have. Address your comments to me in care of the Alumni Association at W.P.I., zip code 01609."



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Reunion Roundup

1904

The shadows lengthen!

Only two of the old guard of the Class of 1904, Roberts and Rankin, got together for their annual reunion on Friday, June 6th.

Webber, who was with us last year, wrote that physical infirmities prevented him from leaving Florida to come north this year. As the ranks grow thinner, two members, Darling and Howland, have died since our last meeting. No word was received from any other classmates.

After a trip around the campus to see the new developments there, the two old timers settled down at the Worcester Country Club to quietly reminisce on past glories and present pains.

With the ladies, Myrtle Roberts and Ethel Rankin, there were four to enjoy the good food at the club and to share the jovs of fellowship which have grown stronger over the years.

ALFRED E. RANKIN, Secretary

1908

The Class of 1908 did not attempt to stage a formal Class Reunion this year, having attained their goal of the 60th Reunion last year. However, Reunion Luncheon on the Hill was attended by Mrs. Robert H. Goddard, Mrs. H. Clayton Kendall, Herbert Carleton, Leon Hitchcock, and Donald Simonds.

DONALD D. SIMONDS, Secretary

1909

We made our headquarters and enjoyed our Class Reunion Dinner at the Worcester Holiday Inn, which we found very satisfactory. Friday afternoon we scattered to visit old scenes and friends. Gone, alas, from Front Street is Poli's, where the unregenerate (no '09'ers) used to drop peanuts on the bald heads below. Fortunately, we were given maps showing the new buildings, or we would hardly have known where we were.

Friday evening we met for dinner with many a "Do you remember" and "What about Joe." At table were Mr. and Mrs. George Barratt; Mr. and Mrs. Lester Carter; Mrs. Dorothy Gates, daughter of Arthur Greenwood (Arthur was a cousin of Mrs. Carter); Mr. and Mrs. Wilfred Jones; Mr. and Mrs. Elwin Kidder; Joseph Schofield; Ralph Whitmore; and his grandson, Thomas Brazeau.

thanks for word from those unable to be with us

After a short business meeting and general "gab fest" we all enjoyed dinners from the regular menu which were traditionally good. Following dinner and more talk which included delight that our flag pole and 1911 banner once more graced



1909

Frank Aguirre in Florida and Frank Hawkes in California both had plane tickets to the show, but both landed in bed with sudden illnesses. There were many expressions of regret for them and that slow recuperation from a recent operation kept Frank Roys at home and that a relapse had taken Jerry Howe to a nursing home again.

Saturday morning the mechanics in our group made the pilgrimage to Chaffins and were again astonished at the great changes there. We were back on the Hill in time for the ritual of class pictures before the Alumni Luncheon. We were joined there by Mrs. Claire Dugdale, who had driven up from New York to join her father, Ralph Whitmore.

RALPH D. WHITMORE

The Class of 1911 held its annual reunion (the 58th) on Friday evening, June 6, at the Sterling Inn, Sterling, Mass.

Five classmates attended with the wives of four and, as a special guest, Mrs. "Pat" Hanaver.

The party was composed of the following: Mr. and Mrs. "Dave" Carpenter, Mr. and Mrs. Hugh Reid, Mr. and Mrs. "Bill" (Clarence) Taft, Mr. LeRoy Holden, and Mr. and Mrs. Howard Chace.

Letters from some members who could not attend were passed around and our the West Campus, the party broke up to travel home in a heavy thundershower.

HOWARD P. CHACE, President

There were ten of us at the dinner at the Marlboro Country Club, one less than last year, as follows: Joseph and Helen Granger, Eugene and Gertrude Powers, Henry and Madeline Rickett, Leon and Margaret Treadwell, Edward Tucker, and Harrison Brown. These are the ones who meet almost every year. On Saturday we were joined by James and Henrietta Shea, making 12 at the luncheon.

The Herbert Foster Taylor Student Aid Fund has already been reported to class members: The principal, now \$16,522.94, cannot be touched but there is \$3,475.78 available for use when needed.

Eight more have died during the year, the latest being Wilfred Peel on May 23. This makes a loss of 20 in two years and leaves the present membership 37. Answers to our questionnaire gave us contact with 25 members; over two-thirds.

Eric Benedict is very active in civic affairs, carpentry, plumbing, entertaining grandchildren, and Florida in the winter. He was invited to be a deacon of his church but in humility he declined. He sent a bulletin of the church in Harwichport for May 25 in which it was noted that the chancel flowers were in memory of



1911

Wallace Montague given by Mrs. Montague. Howard King is in Scarborough, Maine, for the summer. He has had trouble with bis eyes so that he has difficulty in seeing clearly three feet away. He can't read newspaper headlines. His son and family now live with bim and his daughter-in-law does his reading for him. He does all his writing on the typewriter in hopes of hitting the right keys. But we may yet see him at a reunion. Holman Waring is one of our busy bees having given six lectures to universities and professional engineers on water pollution in eight states in the Ohio River Valley. You may wonder what an engineeringconsultant to Camp Fire Girls can be. A proposed dam was in danger of causing a large girls' camp to be condemned. Holman consulted with the Washington engineers and succeeded in getting the dam location changed and the camp saved. He offers the advice: Associate with youth but don't try to keep up with them. Nibs Taylor bas written two lively letters telling how he overcame a spell of depression after a hospital siege and regained his usual poise to operate a fleet of home electrical machines. I had never heard of an electric hoe but he has it. His advice is to keep well and reasonably happy. Don't worry about the new generation; they will come through just as we did. Johnny Beck is a real Floridian and keeps busy with his trees, plants, and flowers. His activities include the local Sigma Xi. Tech may be the only tie left with the north but it is a strong one. Carl Norton bas been one from whom we have heard little so it was a pleasure to get his letter. He is still active with golf,

bridge, etc. and spends time with children and grandchildren. Harland Stuart has written before of the many activities in which he is engaged. We cautiously suggest that, now that Ike Eisenbower is gone some of the leadership of the highly historic town of Gettysburg has fallen on Harland. (This may be truer than we Vaughn Griffin is another realize.) Floridian wbo keeps occupied. But he mentions recent trips to New England, Canada, the Southwest, and Mexico. He advises that keeping busy with projects will make the most of sunset years. Clinton Smith is still connected with the local Transit company. After cataract operations, he is unable to drive but is happy he is able to read again. In January, 1968, Ralph Norton fractured a hip. After recovery be enjoyed a few weeks in Florida but in August he fell again and fractured the other hip. He was able to return home for Christmas but is still in a wheel chair. Our President, Joe Granger, still attends his office or travels for highway and hospital connections. Jim Shea seems to be on the board of half the colleges in New England (perhaps I exaggerate). Frank McGowan and Leon Treadwell are still active in business. Frank Plaisted, Roger Towne, and Guy Whitney had little to report beyond the record of children and grandchildren wbich all mem-The letter from George bers listed. Clifford came after the reunion. He is not very successful in his hobby of avoiding doctors and bospitals. Finally. Secretary-Treasurer Harrison Brown is like a one-armed paper hanger with desk work for the same double office in three other organizations.

If I may be able to sum up the general attitude: There are drawbacks which make life less comfortable than before, if no more than glasses, false teeth, hearing aids, and shiny domes, but we are able to surmount them and really enjoy our golden years.

At our 50th in 1962, 1912 adopted a policy of inviting widows of our members to all our reunions. They also receive copies of all letters sent out to the class which they do appreciate as indicated by a few answers received each year. This year the following responded: Mrs. Lester Greene (Sylvia), Mrs. Archibald Hossack (Doris), Mrs. Harold Nickerson (Marjorie), and Mrs. Joseph Roberts (Anna). Mrs. William Turner (Jessie) wrote in



1912

February giving the details of Bill's sudden leath. Mrs. Harris Rice (Geneva) expressed her appreciation of the gift by the 1912 class of the book entitled "Theory of Sets" to the W.P.I. Mathematics Department in memory of Harris Rice, former read of that department.

HARRISON G. BROWN, Secretary

1914

What a marvelous and enjoyable time we did have, the Class of 1914, at our 55th Reunion in West Brookfield held on Friday and Saturday, June 6th and 7th, of this year, 1969.

To Mike Dufault and Ernie Hedstrom, and their wives, we extend our sincere hanks for the hard work they did to make our party a success. Both of them arrived early in the morning to greet the class at he Copper Lantern Motor Lodge, a ovely, clean, modern and comfortable stablishment just a short distance from he Salem Cross Inn, where we later athered to enjoy a substantial lunch in a grivate dining room at 12:45 p.m.

Following a leisurely meal, we adourned hack to the motel for an afternoon f relaxation, visits with friends, and card laying hy the hridge experts of the class. Since it was a lovely sunny day, aany of us sat in groups in the comfortable utdoor chairs on the green lawn out hack, and just talked, asking and answering questions ahout ourselves, and speculating hout the world of today.

At six o'clock we again returned to the salem Cross Inn where, in a spacious rivate room, an interesting cocktail hour vas thoroughly enjoyed. Following this riendly hour of talk, the Inn once again ut on a delicious meal, a roast heef inner, well and properly served. Our pecial guests for the evening, Lesley Small rom Spencer, and her hrother, Jimmy, a 'ech man himself, as her escort, were reatly enjoyed hy our group.

Lesley, age 18, is one of the first coeds t Tech. For her Freshman year, she veraged a 4.0, which means all "A's" in er studies. Those of us who remembered ack to our own Freshman year, when so nany worked so hard to ohtain only assing marks in some of our courses, took real look of respect at this heautiful, but nodest young lady. Asked after the inner, why she had decided on Tech, she rose and briefly gave some interesting easons for her choice. Incidentally, rother Jimmy is also a 4.0 man and he, no, was regarded with real esteem hy he memhers of our group.

President Dufault then presented Lesley with a sealed envelope, which he informed er contained some green pieces of paper rom the Class of 1914. She could use



1914

them, he told her, in any way that a young college student thought appropriate. On a motion of a member of the Class, she was unanimously voted the "Honorary Sweetheart" of the Class of 1914.

At the short business meeting following our guests' departure, President Dufault discussed and explained some of the details of the Class fund which our Class had given to the College at our 50th Reunion in 1964. He explained that an additional one hundred dollars had apparently heen contributed by someone in the interim period.

At the conclusion of the husiness meeting, Mary and Earl Hughes showed interesting and lovely moving pictures taken on their recent trip this year around the world. In her story, Mary took us to see the wild animals of Africa, parts of India, such as Bomhay, the lovely Taj Mahal, the city of Hong Kong, and to many other exotic places of the globe that we read ahout hut never see. A round of applause, as a thank you to Mary and Earl ended our 55th Reunion Dinner.

Saturday morning the ladies of the West Brookfield Congregational Church put on an excellent and tasty hreakfast in their lovely white church opposite the village green. Following hreakfast most of us went back to Tech to stroll around the grounds, meet and talk to friends from other classes, and to attend the meeting of the Fifty Year Associates. After the usual picture taking, our Class was well represented at the Alumni Dinner in Morgan Hall.

Not all of us were present at all meetings and all places at the same time, hut there were 24 people who sat at our Reunion Dinner Friday night at the Salem Cross Inn, plus our two guests. All told there were 25 memhers, including wives who came to the Reunion.

The following members and wives of our class attended our Reunion: Ray and Lou Crouch, Jack and Rhea Desmond, Mike and Chris Dufault, Paul Glover, Al and Anna Hedlund, Ernie and Bertha Hedstrom, Bud and Dorothy Hennessy, Earl and Mary Hughes, Salt and Anne Knowlton, Kirt and Eleanor Marsh, George and Alice Smith, Clayt and Marion Wilcox, Chet Inman, and Horace Cole.

Fifty-five years out of Tech is a long, long time! We are no longer young, hut at least all of us felt that way at our party. I am sure that not one of us had any regrets in coming.

We made it, but who back in 1914 ever thought we would? For that matter what one of us ever even considered such an absurd figure? Fifty-five years? Who would even want to be alive after fifty-five years? But we are alive! And we still do enjoy life and boy did we enjoy our Reunion, every single one of us!

We are indeed grateful for our ability to attend. We are also grateful to our college which gave us the education to permit us to lead useful, happy, profitable, and worthwhile lives in the communities in which we chose to live and work.

Since the year of our graduation in 1914, many of our classmates have died, a few have never returned, and some have returned only a few times. Those of us who regularly come back think ahout you who do not. We hold you all in kindly esteem

and we wish we could see you. We send you, everyone who is living, our friendly and fraternal best wishes.

> Ellwoon N. "Bun" Hennessy, Secretary

1919

The Class of 1919 held its 50th reunion dinner at the Worcester Country Club through the hospitality of John Coghlin on Friday evening, June 6th. Forty-four people, including 24 classmates with their wives, enjoyed a steak dinner preceded by a cocktail hour.

We observed a moment of silence in memory of deceased members.

A few letters were read from classmates, including one from Hobart Whitney of Pensacola, Florida. He said he was unable to make the trip because he had broken his back a year and a half ago. Today he gets around quite well. Burton Marsh decided not to come because of pressing work activity in Washington. A letter from Mrs. Judah Humphrey told us that Judah, our Class President, was physically unable to attend reunions and requested that we clect a permanent President this year. We then unanimously elected Dr. George R. Rich as President.

Each classmate was called on to introduce his wife and tell briefly of his last occupational engagement and his present retirement status.

I introduced George R. Rich who talked on "Embarrassing Moments in the Life of an Engineer." His extensive activity of a lifetime on some of the largest hydroelectric projects in the world made a most interesting period of entertainment.

Since it was getting late, our further plans of showing project pictures was given up and we went our several ways in the pouring rain.

The Wachusett Motor Lodge was the living headquarters for all who had come from a distance so we started from there for a tour of the campus on Friday morning. The trip included a visit to the Harrington Auditorium and athletic building which was amply described by the campus guard. Next was a visit to the new George C. Gordon Library where we were conducted by a lovely young lady through the various department rooms. We completed our tour with a trip to the Alden Research Laboratories at Chaffins Village in Holden. A graduate student guide, a native of Colombia, S.A., explained the various projects, each in its own building as well as several setups outside for nuclear river heating problems for Vernon, Vt., and the Northfield pumped storage project. Most of our group had not seen the new Laboratory, a surprisingly ample, modern structure of concrete and brick which includes a large lecture room, ample office space, study rooms, and a large research building.

Luncheon at the Franklin Manor was attended by about 28 graduates and their wives and President Harry P. Storke. After lunch he talked to us of some of the problems and happy solutions which have marked his seven years as President of the Institute.

During the afternoon a group went to Westboro to the home of Howard Foster to see his very beautiful formal gardens, his pool, and naturalized wooded area with its lovely walk and unusual trees. Some played golf and others went back to the campus for an extended look.

The class has not had a reunion since our 40th in 1959.

I expect the graduate coming from the greatest distance was Robert Peterson and his wife who came from Pineland, Florida.

Saturday morning the class was welcomed into the "Fifty-year Associates" at their meeting in Daniels Hall.

Group pictures were taken of the class of 1919 with their wives. Each person wore a replica of a World War I helmet which was adopted as a symbol of identification for the class. They were made of plastic. The mold was made by Mayo's youngest son, Nathan. After casting, the helmets were painted and finished by the Mayos. Our class had been broken up because many were drafted into World War I. A few were able to return to graduate with their class of 1919 but others had to wait to be graduated in 1920.

Luncheon for the honored classes was held in Morgan Hall.

Our class was awarded the Attendance Cup for having the highest percentage (computer calculated) of members present. The cup was accepted by President Rich and will be kept at the Institute.

Robert Sessions, class gift chairman, announced that the Class of 1919 is making a gift of over \$70,000 to be equally divided, one-half for the purchase of books for the Gordon Library and the other half for the establishment of a Harry P. Storke Scholarship Fund. More than one-half of this amount was given by a classmate, Leland Durkee, who recently passed away. We have been told that this was the largest amount ever given by a class. This is ample evidence of the extensive effort of Sessions and Coghlin in soliciting the members for this class gift.

The classmates attending the luncheon were each presented a beautifully mounted 50th year diploma by President Storke.

The class disbanded after the luncheon. Many stayed for other graduation activities and others returned to their homes.

> HOWARD A. MAYO, Corresponding Secretary

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The Class of 1924 returned to the Publick House in Sturbridge for the forty-fifth reunion on the evening of Jane 6th. After a social hour and dinner, Helge Johnson very casually conducted a business meeting with the enthusiastic cooperation of Norman Alberti, and the members of the class present. Two second string trensurers, Hooper and Storms, were nominated and elected by acclaim by the others present. This atmosphere was not conducive to the appointment of a committee for the important upcoming 50th, so Helge took the matter under advise-



ment. The less serious part of the evening program was handled by Norman Alberti. All of the wives present gave brief family histories mainly concerned with children and grandchildren. Then the men were allowed to recount their activities outside the home. It turned out that while many were officially retired they were all keeping very busy and happy withal.

The class members attended by their wives were Norman Alberti, Solon Bartlett, Edward Burke, Thomas Counihan, Warren Fish, Leslie Hooper, Harry Hurd, Helge Johnson, Frank Linsley, Clarence McElroy, Arthur Miller, Paul Ronca, Albert Storms, John Styffe, and Donald Wilson. Carrol Tucker and Ray Wilcox were unattended.

Preparations have been started and we are all looking forward to our fiftieth.

LESLIE J. HOOPER

1929

Thirty-six members and wives of the 1929 class conducted their 40th reunion at the Publick House, Sturbridge, on June 7.

Prof. Kenneth J. Merriam and Mrs. Merriam, who had been guests at 1929's 10th reunion, were repeat guests of honor. Prof. Merriam, who goes on emeritus status this year, called the roll of many of the faculty familiar to '29'ers in their student days. He recounted some of the early history of the first class to take the aero option (1929 of course) at Tech, in keeping with the aerospace theme of the reunion.

We only wish more of that famous first class could have been with us to enjoy Prof. Merriam's recollections and to celebrate the occasion. He brought a marvel-



1924

ous collection of aero option memorabilia to the reunion and some of the pictures were a revelation to the reunion's high flyers.

The committee in charge was: Stephen Donahue, chairman; Francis Kennedy, Milton Labonte, Carl Carlson, Andrew O'Connell, Diran Deranian, and Francis Wiesman. They came up in their usual style with a fine banquet and a heartwarming evening for the young in heart '29'ers. The favors were a gold Tech tie bar for the gents and a gold Tech medallion for the ladies.

Other class members present were Frederick Baldwin, Wayne Berry, Nathaniel Clapp, William Crosby, Boris Dephoure, Lester Frank, Holbrook Horton, Bernard Joseph, Harold Richmond, Richard Stone, and Russell Wiley. Arthur Knight presided. Labonte was elected chairman of the next one.

Boris Dephoure traveled the greatest distance to the reunion, from Florida, and Mrs. Arthur Knight took home to Waterford, Vt., the trophy for grandmother the most times.

The class of 1929 was runner-up for the attendance trophy at the alumni luncheon, figured on a percentage basis of class enrollment (1919, celebrating its 50th, was the winner).

The '29 class set the style for identification at the activities on the Hill, a six-inch lapel button, with a big you-know-what numeral in the middle. No more hats and canes for this bunch.

HOLBROOK HORTON

1934

Pleasant Valley Country Club was the scene of the 35th reunion for the Class of 1934. This spot was a beautiful setting including both the course and the clubhouse. None of the class took advantage of an opportunity to play on the famous course.

However, everyone showed great enthusiasm at the pre-prandial libation and later with fabulous roast beef and lobster. We had no formal program but lots and lots of delightful talk about old times and present activities. Tory and Tony Cowal showed some wonderful color movies of our previous reunions. We had a total of 40 including class members, wives, and guests.

Members attending were: Luther Leavitt, Ev Sellew, Warren Davenport,



1929



John Birch, Ed Rothemich, Tony Cowal, Charlie McElroy, Warren Snow, Howard Whittum, Bert Anderson, Paul Sullivan, Bert Hammarstrom, Bill Burpee, Gus Larson, Joe Flanagan, Harold Bell, Charley Frary, Charley Dayton, Howard Stockwell, Warren Burns, Don Vihher.

Mr. and Mrs. John Birch had as their guest Miss Dale McInnis of Lagonillas, Venezuela, a student at Cushing Academy, Ashhurnham, Massachusetts.

HOWARD WHITTUM

1939

The 30 memhers of the Class of 1939, including wives, who met for the 30th reunion at the Pleasant Valley Country Cluh, agreed unanimously that no one there had changed a hit. It is assumed that any change must he in the ones that could not make it! An informal cocktail hour and dinner was held after several members enjoyed the famous and beautiful Pleasant Valley golf course. Dr. and Mrs. Schwieger were guests, and Al brought us up to date with a short talk on changes in college thinking, as well as growth in numbers and physical plant.

Jake and Mrs. Hagopian won the prize for coming the farthest (California), although the winner had to be decided by lottery, since three others came from there, too. Bud and Mrs. Jacques won the prize for the newest grandchild, and Bob and Mrs. Martin flew off (to West Palm Beach) with the door prize.

On Saturday, after the official school festivities, about 20 members again met, this time for a cocktail hour and buffet at Brad Ordway's home in Sturbridge.

The committee heard from many who

could not come, but we hope that the next time around there will he less conflict with weddings and graduations, and more will be able to join in the fun.

1944

The reunion of the Class of 1944 was just great.

A small group of loyal memhers who obviously had plenty of leisure time on their hands worked in a pleasant afternoon of golf on Friday at Wachusett Country Cluh. The planning committee thought that a few people might come in to Worcester early; so Kim and Betty Woodbury offered to open their home for the few who might want to drop in. About

50 showed up, which turned out to he an enjoyable warm-up for the hig day on Saturday, especially for the Woodburys.

Saturday dawned clear and hright, and the memhers of the class showed up not so clear and hright for the class picture about 11 o'clock. Lenny Israel had made arrangements for the fancy straw hats that you see in the picture. As you can also see, none of the members of the class have changed a bit in the last 25 years. So there was a good deal of friendly chatter before we adjourned to Morgan Hall for the Alumni Luncheon. Our class dominated the hall, at which a few other classes were modestly represented. Naturally, the Class of '44 was honored as one of the reunion classes, hut unfortunately Jim Donahue was called on to make his remarks following the 50-year class. Their remarks were brief-limited simply to their announcement that they were pledging \$70,000 to the school. At that point Jim was ready to crawl out of the room rather than announce our class gift. Jim made some pleasant remarks, and announced our class pledge of \$4,000 hased somehow on the \$1,700 or so that had heen turned in up to that point. Jim sure will appreciate any further help you can give him to keep him honest, and out of hock. Then to add to our indignity, the 50-year class took the prize for the highest percentage in attendance.

In the afternoon we toured the magnificent new Harrington Field House and the impressive new Gordon Lihrary which will he filled with hooks contributed from the Class of '44 gift.

But then came the best—the banquet at Franklin Manor. It was a hilarious



1939



1944

evening starring Jim Donabue supported by Erl Lagerholm as his straight man. There were informal anecdotes related by a number of members, including Al Larkin, Bill Raymond, Hal Blake, and Doctor (People Doctor) Al Harder and his People Doctor wife. Then there were the lively debates about the outstanding members of the class as follows:

Came the farthest: Nick Economou from Salt Lake City

Came the shortest: Cbris Terpo (I mile) and Kim Woodbury (1/2 mile)

Most kids: Bud Mellor (11)

Most Grandchildren: Bud Holbrook (5)

Newest father: John Bjork (5 months)

Longest sideburns: Nick Economou (4 inches long and 2 inches wide)

Least Hair: Jim Dasbner

And so it went, long into the pleasant evening.

On Saturday, the Class of 1944 25th reunion yearbooks, a collection of the questionnaires returned to the committee, were distributed, and they make fascinating reading. If you would like one, they can be purchased, as long as they last, from the Alumni Office for \$5.00. I highly recommend it, and it will help bail out Jim on the class pledge.

Like I said, the reunion of the Class of '44 was just great.

1944 Class Picture

Class members, starting front row, left to right:

Ist row: Hal Blake, Jim Donahue, Jim Dashner, Buzz Gerber, Joe Marcus, Dave Field, Bill Raymond, John Patterson.

2nd row: Bud Holbrook, Al Harder, Howie Swenson, Cbris Terpo, Kim Woodbury, Dimi Dimitroff, John Bjork, Dick Holden.

3rd row: Dick Merrell, Lenny Israel, Joe Gibson, Sherm Campbell, Gordon Anderson, Einar Eriksen.

4th row: Nick Economou, Roy Babarian, Rosie Rosenthal, Al Larkin, John Lebourveau, Miles Rotb, Paul Pressel, Lag Lagerbolm.

Kim Woodbury

We welcome
your comments
and ideas
concerning the
publication
of the Journal.

Please address:

Editor, The Journal Worcester Polytechnic Institute, Worcester, Mass. 01609

ALUMNI COUNCIL (Continued from page 27)

near future the Alumni Association should be made directly responsible to the development office of the college. He stated that it was his belief that this was in the best interests of all concerned.

The Council voted to reduce next year's appropriation of scholarships to the college to a minimum of \$10,000 and a maximum of \$21,000, providing funds are available. It had been the policy to appropriate the equivalent of ten full scholarships for more than a decade. The reduction was made in order to balance the budget.

A petition for alumni living in the Wilmington (Dela.) area for the establishment of a chapter was approved.

In other business, the Council heard reports of committees on admissions, redistricting, finance, *The Journal*, placement, chapter programs, and the President's Planning Group.

On the previous day, the Alumni Fund Board held their meeting. At this session, they learned that this year's Alumni Fund was well on its way to setting another record. As of June 4, some \$112,000 had been contributed by 2,741 alumni. This represents an increase in both dollars and donors. The Fund Board, in other business, discussed and approved the plans for next year's Alumni Fund and also recommended a program of continuing education.

Re-elected to the Fund Board by the Council were Gordon F. Crowther, '37, and Irving James Donahue, Jr., '44. Donahue was reelected Chairman.

Completed Careers

Frederic Bonnet, Jr. (Honorary)

Frederic Bonnet, Jr. died on March 7, 1969, at Ridley Park, Pa. He was a professor emeritus of chemistry at W.P.I., where he taught from 1913-1918. Later he hecame technical adviser and director of the Standards Dept. of American Viscose Corp. He was 91 years of age at the time of his death.

Ernest Mosman, '96

Ernest Mosman, '96, died on March 19, 1969, at Ridgecrest, Calif.

Brookline, Mass., was his place of birth in 1871. He attended secondary school at the Bromfield School in Harvard.

He held several johs in the Worcester area prior to his employment hy the Naval Gun Factory in Washington, D.C. In 1908 he began work for Suherg Fabric and Ruhher Co., Cleveland, Ohio. During World War I he was a captain in the Ordnance Dept. of the Rock Island Arsenal, Ill., where he was responsible for increasing the output of equipment. From 1919 to 1931 he was a staff engineer for Management Service Co. of Chicago, Ill. During the 1930's, he was self-employed, and in 1940 he hecame associated with the Fairchild Engineering Co. of Cleveland, Ohio. He retired in 1946.

He married the former Mary E. Lawrence in 1904. They had three sons and three daughters.

In his later years, he has heen a faithful attender of alumni reunions at W.P.I.

Charles A. Conant, '01

Charles A. Conant, '01, died on July 6, 1967, at McHenry, Ill. He lived at 1714 North Ave. He had been ill with heart disease for several years.

He was horn in 1879 at Leominster, Mass. He majored in electrical engineering.

Little is known of his husiness career. We do know that he worked with Spooner & Merrill, Inc. of Chicago, retiring in 1948. Until recently he lived in Wilmette, Ill.

John Fanning Hubbard, '06

John Fanning Hubbard, '06, died on March 18, 1969, at Niagara Falls, Ontario, Canada.

He was born in Canaan, Conn., and attended Searls High School in Great Barrington, Mass. At W.P.I. he majored in electrical engineering. He first worked for Westinghouse and later for Ontario Power Co. In 1918 he became a consulting engineer for Willis L. Adams, and in 1924 he started his own company. In 1939 he hecame an expediter for the Chemical Construction Co., and in 1944 an electrical engineer for The Carhorundum Co. In 1949 he joined the Niagara Electrical Contractors as office manager and engineer, retiring in 1965.

Mr. Huhhard was a 32nd degree Mason and a Shriner.

His first wife, the former Edna Louise Cole, died in 1944. A son, USAF Lt. John Huhhard, died in 1955.

Surviving are his wife, the former Sarah Muriel Cole; one daughter, Mrs. David Bidwell; and three grandsons.

Clarence M. Stowe, '12

Clarence M. Stowe, '12, died on January 28, 1969. He lived in Edwell, N.Y.

He prepped at Cushing Academy, Ashburnham, Mass., prior to entering W.P.I.

For many years he was employed by the Fred T. Ley Co., and later hy the firm of Johnson, Drake & Piper, Inc., hoth of New York City.

Among his survivors is his daughter, Mrs. Marion S. Angelo.

Marius McKarl Nielsen, '25

Marius McKarl Nielsen, '25, died on April 7, 1969, at his winter home on Casey Key, Nokomis, Fla., following a stroke suffered last Septemher.

Born and educated in Holyoke, Mass., he majored in electrical enginneering at Tech. He later received degrees from Union Theological Seminary and Columhia University.

He worked for Westinghouse for a short time and in the early '30's he did missionary work in the Far East. He hecame associated with the Unitarian Church in 1935 and served as minister to various congregations. For the last 18 summers he was minister of the Stevens Memorial Chapel in Vineyard Haven, Mass. During the winter he lived in Sarasota, Fla., where he founded a church in 1955. He was named minister emeritus in 1964, when he retired.

He is survived by his wife, the former Lucienne Glorieux Twitchell.

George Warren Keller, '51

George Warren Keller, '51, died on December 14, 1968, at St. Peter's Hospital, New Brunswick, N.J.

A native of Titusville, N.Y., he later moved to Trenton, N.J., where he attended high school.

At W.P.I. he majored in civil engineering and was a memher of Lamhda Chi Alpha.

Upon graduation, he took a joh with Theodore Loranger & Sons, New Bedford, Mass. In 1954 he became a project engineer in highway design for the firm of Howard, Needles, Tammen & Bergendoff, New York City.

He married the former Eunice J. Bradley in 1951. They had two daughters and one son.

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Your Class and Others

1907

William R. Waod has let us know that he and his wife have moved from Bradenton, Fla., to their son's home in Atlanta, Ga., at 22 Woodcrest Ave., N.E. Mr. Wood retired in 1950 from the São Paulo Tramway L. & P. Co. in Brazil.

1910

In May, Ernest W. Bishap and his wife went to live with their daughter, Mrs. James M. Finch, Jr., in Hamden, Conn., after 40 years in Larchmont, N.Y. Mr. Bishop retired from the Western Electric Co. in 1952.

1913

Altan H. Kingman sends the following news from Winter Park, Fla.: "Mrs. Kingman and I recently moved to the Winter Park Towers and very much enjoy our new home and newly found friends at 1111 S. Lakemont Ave. We feel most fortunate to be so near our former home and can still retain our many Winter Park friends that we have made during the past ten years while at 1848 Mizell Ave. Except for being a 'little' older, we are both well and still enjoy our church and club connections. Steven Cutler Howe. who arrived in this world last December. makes us great-grandparents. regards to all."

1915

A note from William J. Becker tells us that he has moved from Stuart, Fla., to Kansas City, Mo. He writes, "Wife and I decided we should move closer to our children. Our daughter and her husband with their four children live in Kansas City, and our son, William J., III, with his wife and two children live in Ohio. Our daughter's husband is city manager of Kansas City, and our son is a research chemist."

1917

Andrew B. Holmsirom, retired vice president of Norton Co. in Worcester, has been elected to his 14th term as president of the Central Massachusetts Chapter of the National Safety Council.

1921

Alexander L. Wilsan, who is with the Mississippi Valley Structural Steel Co. in Melrose Park, Ill., tells us that "Alexander C. Wilson, great-grandson of J. Fred Wilson, class of 1877, was born March 18, 1969.".. We have learned that Lincoln Thompson has retired from Raymond Engineering Inc., where he was chairman of the board and chief executive officer. He is acting as consultant to the company, located in Middletown, Conn. Linc, who lives in Cheshire, Conn., is a trustee of W.P.I.

1924

We have received the following note from Milton A. Bemis: "Retired from Pennsylvania Dept. of Highways in late 1967 and moved to Attleboro, Mass., to be near daughter and granddaughters. Now working part-time for consulting engineers in Boston as traffic engineer, designing surveillance and control system for all express highways, existing and proposed, inside Route 128, except Mass. 'Pike.'

1925

Kenzo Matsua has retired as an industrial engineer for the U.S. Army in Japan. His home is in Tokyo.

1926

Married: Clyde W. Hubbard to the former Virginia Haley, on June 1, 1968. Clyde is with Stone & Webster Engineering Corp. in Boston, Mass. His home is in Nahant.

Joseph P. Flemming is a self-employed educational consultant in Hampton Bays, N.Y... The executive director of the Ludlow (Vt.) Area Chamber of Commerce is Kenneth R. Archibald. He and his family live in Syracuse, N.Y... Howard B. Smith, for the past 22 years president of the Middletown (Conn.) Savings Bank, and the recipient of the 1968 "Outstanding Citizen Award" in Middletown, has moved to a retirement home in Orleans, Mass. He reports that his principal occupation hereafter will be beachcombing.

1928

We have learned that Arthur M. Tarbox has retired as president and general manager of Boston & Lockport Block Co., E. Boston, Mass.

1932

Jahn R. Tinker, retired swimming coach at Gardner (Mass.) High School,

recently was honored at two swim meets. He served as an honorary referee at the 23rd Annual Mass. Interscholastic Swimming and Diving Championship at the University of Mass. The event was also dedicated to him. At the New England Championships at the University of New Hampshire, his fellow coaches of the New England Interscholastic Swimming Association honored him with an engraved pewter plate for his outstanding service to New England interscholastic swimming. He was called "one of the most devoted and dedicated coaches within the Commonwealth of Massachusetts."

1934

J. Leonard Burnett is now manager of composition services at Vail-Ballou Press, Inc., in Binghamton, N.Y., where he and his family also make their home. . . We received the following note from James V. Rowley: "Retired in 1968 as chief, Quality Assurance Div., Springfield (Mass.) Armory, which was phased out in April, 1968. Since retiring, my wife and I spent two months in Europe and several weeks in Florida this past winter. I'm also enjoying our ten grandchildren." . . The superintendent director of the Blackstone Valley Vocational Regional School District in Massachusetts is Paul J. Sullivan. Paul was formerly with the Mass. Dept. of Education where he was senior supervisor in charge of all area redevelopment act training programs and manpower development and training act programs... Continuing with the Worcester Foundation for Experimental Biology in Shrewsbury, Mass., Dr. Elijah B. Romanoff is senior scientist with special interest in regulatory mechanisms, particularly in reproductive physiology.

1935

A note from Raymond L. Moeller tells us that he "retired March 1 after 34 years' service with General Electric. Began with G.E. at graduation and had always planned to retire at a very early age. Essentially all of my working career was spent at the W. Lynn (Mass.) plant and my last position was manager—professional employee relations." Ray has moved to Cromwell, Conn.

1936

Capt. Daniel J. Harringtan, 111 has retired from the U.S. Navy and is living in San Diego, Calif. . . Laring Caes, Jr., consultant for the Research and Development Dept., Grinding Wheel Div., of Norton Co. in Worcester, has been granted his 38th patent by the U.S. Patent Office. His latest invention is an apparatus for intermittently changing the eccentricity

of grinding wheels during the grinding process. It will reduce the cost and improve the efficiency of grinding wheel processes.

1937

B. Allen Benjamin is now professor of civil engineering at W.P.I. He has been at Tech for six years... We received the following note from Martin G. Caine: "I joined Tenneco Chemicals, Inc., about two years ago as V.P.-Administration of Tenneco Plastics Div. On July 1, 1968, I was made President of the Tenneco Plastics Div., Tenneco Chemicals, Inc., with my office in Piscataway, N.J.' Martin and his family live in Livingston. .. "Here is a belated bit of news about myself," writes Laurence F. Granger. "On December 2, 1968, I joined the American Iron and Steel Institute as Staff Representative for the Committee of Tool Steel Producers and the Committee of Seamless Specialty Tubing Producers." The Institute is located in New York City, and Mr. Granger resides in Hartsdale.

1938

Donald W. Howe, Jr. has been named professor of physics at Worcester Tech. Don joined the W.P.I. faculty in 1941... The owner of Swenson's Men's Shop in Walpole, Mass., Francis B. Swenson was recently elected to the board of directors of the Walpole Cooperative Bank... A. George Mallis is a partner in the firm of Mallis, Patterson & Burgener, Architects-Engineers, located in Springfield, Mass. His home is in Wilbraham.

1939

Continuing with Stanley Tools Div. of The Stanley Works, Robert F. West was recently appointed manager of new product research in the New Britain (Conn.) facility. Bob and his wife, Dorothy, and their two children, Karen and Lee, reside in W. Simsbury. . . The Spencer Turbine Co. of Hartford, Conn., has announced the appointment of David H. Hunt as vice president. Dave has also been elected to the board of directors of the company, a manufacturer of turbo compressors and vacuum systems. He joined Spencer in 1954 as an engineer and now holds four patents on mechanical devices related to Spencer industrial vacuum cleaning equipment.

1940

Raymond J. Forkey has been elected to the board of directors at Riley Stoker Corp. in Worcester. Ray is president of Coppus Engineering Corp. and is a trustee of W.P.I... The owner and man-

ager of Hafey Air Conditioning Co. is Edward E. J. Hafey. The company has offices in Concord and San Pablo... Vernon J. Liberty has joined Magnat Corp., Easthampton, Mass., as a sales engineer in the Industrial Roll Div. His territory includes all of New England and New York State, except New York City and Long Island... Continuing with United Shoe Machinery Corp., W. Clark Goodchild, Jr. is the senior engineer, Special Projects Dept., Central Research Div., located in Beverly, Mass. Clark is secretary-treasurer of the North Shore Alumni Chapter.

1941

Merrill W. Wright, president of G. F. Wright Steel & Wire Co., Worcester, was appointed by the Treasury Dept. to serve as chairman of the "Share in America '69" campaign in behalf of the U.S. Savings Bonds Program for the Worcester area. . . Aetna Life & Casualty of Hartford, Conn., has announced the promotion of J. Philip Berggren to assistant secretary in the engineering department, casualty and surety division. His previous position was superintendent of technical services. . . We have learned that Donald T. Atkinson is manager-aerospace market development in General Electric's Defense Programs Div. in Washington, D.C. Don's previous title was manager-electronic systems field operation. He resides in Bethesda, Md. . . Donald F. Palmer, Jr., president of Earle Gear and Machine Co. and Donegal Steel Foundry Co. of Philadelphia, announced recently that he and the president of the Tower Industrial Corp. had purchased all the outstanding stock of the Wicaco Machine Corp. of Philadelphia. Don will be president and chief executive officer of the company. . . The manager of industrial engineering at Raytheon Co.'s Equipment Div. in N. Dighton, Mass., is John P. Schultheiss. John and his family live in Attleboro.

1942

Howard C. Warren has been named to the board of directors of Riley Stoker Corp., of Worcester. Howard is president and founder of Scam Instrument Corp. of Skokie, Ill.

1943

Norton Co. of Worcester has announced that Arthur H. Medine, Jr. has been appointed superintendent of engineering, large vitrified products, in the Grinding Wheel Div. Art lives in Holden.

1944

Charles E. Cannon is vice president of Coffin & Richardson, Inc., consulting engineers, in Boston, Mass. He and his family (his wife, Mary, and their three children, Susan, Mark, and Mathew) live in Sherborn. . . The sales manager in the Explosives and Mining Chemicals Dept. of American Cyanamid Co., Wayne, N.J., is Leslie M. Davis. Les and his wife. Dona, have five children: Anne, 16; Evan, 14; Matt and Tom, 12; and Stephanie, 2. Their home is in Mountain Lakes. . . Rex Chainbelt, Inc., Milwaukee, Wisc., recently announced the appointment of Alfred F. Larkin, Jr. as president of its Conveyor and Power Transmission Divisions. The divisions are a combination of the firm's Chain and Transmission and Conveyor Divisions to provide for more efficient manufacturing and marketing of Rex products. . . "Three Tech men have been working for 31/2 years at Communications Satellite Corp., Earth Station Implementation Div. (Washington, D.C.)," writes L. Howard Reagan. "The division has 42 people, so the ratio of W.P.I. alumni is relatively high. The men are William D. Young, '50; Richard J. Mc-Bride, '56; and myself. Of the above 42, 32 have engineering degrees, which proves: if you blow in a Tech man's ear, smoke will come out the other side!" . . Donald E. Buser is now with Allied Chemical Corp. in Morristown, N.J. He and his family live in Glen Rock. . . We received a note from Benjamin B. D'Ewart, Jr. which states that he is a "Consultant in structural dynamics to Bell Aerosystems Co., for a surface effects ship to be built in the New Orleans area for the Navy and Maritime Commission." . . Premier Thread Co. employs Warner H. Tabor as a plant engineer in Bristol, R.I., where he also makes his home.

1945

The new director of facilities at Glassboro (N.J.) State College is Robert E. Duffy. Bob and his wife, Mary Jane, and their two children, Kathleen and Kevin, live in Cherry Hill. . . Avco Missile Systems Div. in Wilmington, Mass., has appointed John A. Templeton director of program development. John will be responsible for the Division's program development and marketing activities across a wide range of business areas including operational re-entry systems, environmental technology, optical and marine systems and industrial services. John, his wife Marjorie, and their four elilldren live in Wellcsley.

1946C

Philip G. Duffy has been named to fill the new position of marketing manager at Fairbanks Morse Weighing Systems Div. of Colt Industries in St. Johnshury, Vt. Phil will have responsibility for all St. Johnshury and E. Moline product marketing, advertising, national accounts, and government and export sales. He and his family will be moving from Trenton, N.J., to St. Johnshury shortly.

1947

Paul D. O'Donnell, corporate director of manufacturing controls at Westinghouse Electric Corp. in Pittshurgh, Pa., was recently elected president of the American Institute of Industrial Engineers, the world's largest professional society for practicing industrial engineers. The vice president of husiness planning and development at Potter Instrument Co., Inc. in Plainvicw, N.Y., is Donald B. Thompson. Don's home is in Huntington.

1948

Dr. Donald C. Eteson of W.P.I.'s Electrical Engineering Dept. was recently promoted to associate professor. Don joined the faculty in 1962 as an instructor. . . Carl P. Hershfield is now with Raytheon Co. in Bedford, Mass. . . Continuing with Ingersoll-Rand Co., Arne A. Kellstrom is now marketing manager in the Air Power Div., Corning, N.Y. He and his family live in Elmira... We received a note from Charles L. Loveridge, Jr.: "I am still with Camp, Dresser & McKee as resident engineer on a water treatment plant for the City of Brockton, Mass." . . Kerr Glass Manufacturing Corp. has announced that Richard W. Morse is Director of Employee Relations in the new Packaging Products Div. in Lancaster, Pa. . . Bruce E. Nagler continues with Metcalf & Eddy in Boston, Mass. His home is in Needham. . . A note from Edward J. Powers lets us know that he is now employed by Pratt & Whitney Aircraft, E. Hartford, Conn.

1949

We have learned that Fred J. Brennan, Jr. is with Singer Co.'s Kearfott Group in Wayne, N.J. He and his family live in Ridgewood. . . Paavo Junno writes that he was promoted in September of '68 to works manager at Chicago Pneumatic Tool Co., Franklin, Pa. This is a foundry and plant producing compressors, diesel engines, and mining and construction equipment. . . The new manager of gas supply and industrial development for the Worcester Gas Light Co. is Harold A. Melden, Jr. Harry joined the company in 1950 and most recently was director of commercial and industrial development. . . Another promotion for a '49'er was recently announced by Norton Co. in Worcester. Guy D. Metcalf is now chief development engineer, Machine Tool Div. He is in charge of the research and design department. Guy's most recent title was product quality engineer... Karl R. Berggren, Jr. sends us some family news: "My oldest daughter, Sylvia, is a freshman at Boston University's School of Occupational Therapy." Karl is Manager of Engineering Services at Buffalo Pumps Div. of Buffalo Forge Co., Buffalo, N.Y.

1950

Henry S. Coe, Jr. is now with Polaroid Corp. as Dept. Manager, Facilities Engineering, at the Cambridge (Mass.) branch. . . DuPont in Wilmington, Del., employs Arthur W. Joyce, Jr. as development manager and venture manager in the Electrochemicals Dept. . . Royal Typewriter Co., Paramus, N.J., a div. of Litton Industries, has a new president in the person of Robert F. Stewart. Boh joined the company five years ago and has held key positions at Litton, most recently as vice president and general manager of Royfax Div. He and his family live in Convent Station, N.J... We have received a note from Robert D. Murdock, hringing us up to date on his career. "With UNIVAC, Twin Cities (Minn.) since Jan., 1964. Recently promoted to manager, language processor research and development." Boh and his family live in Minneapolis... "I am located in Tiajuana, Venezuela, with Creole Petroleum Corp., a suhsidiary of Standard Oil of New Jersey," writes John C. Margo, Jr. "I am presently supervisor of the Planning and Programming for the Maintenance and Construction organization. We have 850 men engaged in these activities, which include $2\frac{1}{2}$ million feet of pipe laying in the lake, pile driving, four gas turbine injection plants, 120 flow stations, 2,500 wells, etc."

1951

Norton Co. in Worcester has announced the appointment of Stanley R. Lindberg as superintendent of engineering, organic products, in the Grinding Wheel Div. Stan joined Norton in 1956 and most recently was a supervisor of manufacturing control, organic products. . . Neil E. Sullivan is self-employed as a writer of programmed learning materials in Venice, Calif., and is working toward his Ph.D. in Educational Psychology at U.C.L.A. (he holds an M.A. in Psychology from Hollins College)... Having completed courses and successfully passed the real estate hroker's examination required hy the state of Massachusetts, John M. Tomasz and his wife, Eleanor, have formed their own real estate husiness, Highland Realty, located in their home

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in Ameshury, Mass. Eleanor is also a licensed broker in the state of New Hampshire. . . A note from Charles F. Mulrenan states: "I was promoted to chief engineer of the Chicago South Shore & South Bend Railroad on March 1. The South Shore is an electric railroad which transports approximately 11,000 commuters each day into Chicago. We also operate freight trains with electric engines. We have two daughters-Jean, 13, and Kathleen, 2." Charlie and his family live in Michigan City, Ind. . . We have learned that Vartkes Sohigian is an associate with University Affiliates, Inc., Brighton, Mass. Varkey's home is in Andover.

1952

Elliott W. Lewis sends the following information: "I have been elected president of Adams-Sullivan, Inc. I will he general manager of this major construction machinery distributor, which maintains plants in the cities of Industry and El Cajon, Calif. Major product lines are Joy compressors, drills and hoists, Hein-Werner hydraulic hackhoes and rotograders, and Buffalo-Springfield rollers and compactors." Elliott and his family live in San Marino. . . The district manager for Ashland Chemical Co., a Div. of Ashland Oil & Refining, in Englewood Cliffs, N.J., is Philip J. O'Connor. His home is in Wyckoff. . . Morristown, N.J., is the location of Daniel G. Stoughton, who is a project engineer for Allied Chemical Corp. He and his wife and their two sons live in Madison. . . The Director of the Board of Puhlic Works in Wakefield, Mass., is Richard C. Boutiette.

1953

We have learned that G. Brady Buckley is now manager of marketing, Educational Relations and Recruiting Operation, Corporate Management Manpower Development, at General Electric Co. in New York City. Brady joined G.E. after graduation. He lives in Morristown, N.J., with his wife and their three children... The supervisor of professional and technical recruitment at Pratt and Whitney Aircraft, E. Hartford, Conn., is William M. Walsh. Bill was named chairman of the steering committee for the Greater Hartford Chamber of Commerce 1969 Carecr Conference. . . James C. Hodder is now with ABT Associates in Cambridge, Mass. He lives in Belmont. .. We have learned that John O. Morin has joined Sigma Instruments, Inc. in Braintree, Mass.

1954

A letter from Wesley D. Wheeler states: "Just a note to inform you that I am now the Port Engineer for American Trading and Production Corp. Marine Div. (in New York City). Our fleet consists of six U.S. flag tankers, and my duties will include the hushanding of these ships. Since receiving my master's degree from the University of Michigan in Naval Architecture and Marine Engineering, I spent a good deal of time traveling throughout the U.S. and Europe on vessel construction, repair and design and thoroughly enjoyed my work. I might note that Raymond M. H. Naudin is a neighbor of mine and he, Joachim Herz, and I get together quite frequently." .. Norton Co. in Worcester has announced the recent appointment of Emmanuel Milias as supervisor, process systems research, for the research and development department, Grinding Wheel Div. He will he responsible for the development of major new systems for the manufacture of grinding wheels. . . Hugh K. Tufts, Jr. has joined the Carlson-Daniel Insurance Agency, Inc. in Westhoro, Mass., specializing in the field of financial planning. Hugh and his wife, Joan, and their three children live in Ashland.

1955

The new vice president and plant manager at PresMet Corp., Worcester, is Reynald J. Sansoucy. Reynald joined PresMet in 1955 and most recently was manufacturing manager. . . Gerald L. Sutton writes that he is now program administrator in IBM's Data Processing Div., Poughkeepsie, N.Y... The chief of the environmental planning hranch, airports service, of the Federal Aviation Administration in Washington is John R. Goodwin. John's home is in Arlington, Va... We received a note from Lt. Col. Dean M. Carlson, who is now stationed in Germany with an APO New York address. Dean writes, in part, "Elke, my wife, is happy to he in Germany and near her folks who are in Karlsruhe-not too far from Frankfurt. Our son (Dean Mills, two years old), who was born while I was in Vietnam, is a husky youngster who gives his sister (Kirstin Barhara, age four) considerable competition. I expect to stay here about another year."

1956

Born: To Mr. and Mrs. Christopher R. Collins, a daughter, Lynn, on July 7, 1968. They now have three girls and one boy. Chris writes, "Also built and moved into a new home on the Chesapeake Bay (Arnold, Md.) this past year. Still with Westinghouse Underseas Div. (Baltimore)."

Henry J. Dumas, Jr. has hrought us up to date with the following note: "Now listed in Who's Who in the East for 1968-69, and elected vice president-engineering mechanics for Electronics, Inc., Camhridge, Mass., in February. We manufacture ECG Recorders for the hiomedical industry. Our equipment was used on General Eisenhower at Walter Reed Hospital.".. At a dinner in his honor on April 12, presided over hy master of ceremonies Irving James Donahue, Jr., '44, Edwin B. Coghlin, Jr. received the 1969 Shrewsbury (Mass.) Jaycee Distinguished Service Award. The award recognizes Ted's meritorious service to his family, church, and community. Ted, active in many groups in the Worcester area, is vice president and manager of the Engineering and Contracting Dept. of Coghlin's, Inc. of Worcester, president of Shepherd Engineering, Inc., and a vice president of Coghlin Electric Co., hoth of Worcester. Ted was also recently elected a director of the Mechanics National Bank... A news item has been received from Roger H. Tancrell: "I received Ph.D. degree in Applied Physics from Harvard University in March, '69. Am currently employed at Raytheon Research Div. in Waltham, Mass., working on microwave ultrasonic devices.

1957

George W. Matarrese has sent the following note: "I am the chief plant engineer at Foote & Davies, Inc., a division of McCall's Printing Co., in Atlanta, Ga. We have just adopted a beautiful daughter, Stacey Elizaheth. She was 51/2 weeks old when we brought her home. She quickly had her Dad wrapped around her finger." George and his family live in Dunwoody. . . "I am still with the United Illuminating Co., New Haven, Conn. Recently appointed engineering manager. We (wife, Jane-Becker Class of 1956and children David, 11, and Sherry, 9) live in N. Branford, Conn.," writes Leon A. Morgan... Tallahassee, Fla., is the location of George A. Rodes, who is an arca engineer for the U.S. Dept. of Transportation, Federal Highway Administration, Burcan of Public Roads. . . The Superior Electric Co. of Bristol, Conn., announced the appointment of Charles A. Whitney as product engineer in charge of the positioning systems engineering group, Charlie joined Superior Electrie's engineering dept. in 1965. He and his wife and their three children live in Canton... Dr. Robert A. Beaudet continues at the University of Southern California in Los Angeles in the Chemistry Dept. He is an associate professor on an

1961

Alfred P. Sloan Research Fellowship. He has heen studying intermolecular forces within small molecules. knowledge of these forces is significant in determining the shapes and conformation of molecules. Ideally, complete knowledge of these intermolecular forces would allow the complete theoretical prediction of the structures of large molecules such as DNA and proteins. Boh is also studying the molecular structure and other properties of small gaseous free radicals such as OH. The properties of these free radicals are extremely important in understanding radio astronomy, pulsar, space chemistry, and gaseous chemical reactions. . . Norman C. Ristaino was recently cited by the U.S. Army Natick (Mass.) Lahoratories as "Handicapped Employee of the Year" in recognition of his outstanding performance as a standardization program analyst in the Quality Assurance Office and of his long record of community service. While a high school freshman, Norm was afflicted with polio which affected hoth his legs. Despite his handicap, he completed his education and joined the Natick Lahs in 1957. Norm, a resident of Franklin, Mass., has served on their Planning Board, Board of Public Works, School Survey Needs Committee, and the High School Building Committee. He is also president of the Franklin Softball League and past Chairman of the Franklin March of Dimes. He received the Distinguished Citizen Award of the Franklin Jaycees in 1967.

1958

Richard A. Lisbon is now with the International Div. of Bristol Myers Corp. in Syracuse, N.Y... We have learned that Dr. David W. Abbott is associate professor of psychology at Florida Tech. University in Orlando. . . The appointment of Stanley O. Anderson, SIM, as manager of production engineering was recently announced hy the Worcester Div. of Crompton & Knowles Corp. His home is in W. Millhury. . . The Worcester Gas Light Co. recently announced a promotion for Peter C. Dirksen, Jr. He is now director of industrial development. Pete has heen with Worcester Gas since graduation, except for a period of military service with the Army. He and his wife, Beverly, live in Westhoro... Robert B. Sundheim is with the law firm of Meyer, Tilherry & Body, Cleveland, Ohio. He and his wife, Mary Lou, and their two children, Kirsten, age 8, and Robert, Jr., age 6, live in Shaker Heights.

1959

Married: Joseph E. Swider, Jr. to Miss Margaret H. Moriarty of Longmeadow, Mass., on April 26, 1969. Joe writes: "I am presently employed by the Space Systems Dept. of the Hamilton Standard Div. of United Aircraft. Until recently I was system manager on the Apollo Portable Life Support System (Backpack) Program for Hamilton. With the completion of two major milestones in that program (Qualification and successful first flight-Apollo 9), I am now serving as the Hamilton Standard Resident Representative at McDonnell Douglas Astronautics Co. in Huntington Beach, My primary responsibilities in this position are to provide management and technical coordination on the MOL (Manned Orhiting Lahoratory) Program and various other space programs in which Hamilton and McDonnell Douglas are associates."

Born: To Mr. and Mrs. V. James Cinquina, their first child and son, David James, on August 13, 1968. Jim and his family live in Ringwood, N.J.

Rex Chainhelt, Inc. has announced the appointment of Robert A. Berg as marketing manager of its Hanna Fluid Power Div. in Chicago, Ill. Bob joined Rex Chainhelt in 1963 and most recently was eastern district manager for the Construction Machinery Group. and his family live in Lake Forest, Ill. . . We received the following note from Alexander L. Pratt: "Received MBA degree from the University of Maine in June, 1968. Due to joh changes, the degree was the result of work at three graduate schools: Boston University, Maine, and Bahson Institute. Employed hy Sanders Associates, Nashua, N.H., in Special Requirements Group of E.C.M. Div. I have been with Sanders since April, 1967. We have a son, Chet, age 41/2, and a daughter, Elizabeth, age 21/2."

1960

Ronald L. Letteney is a Ph.D. candidate at Johns Hopkins University in Baltimore, Md. He and his wife, Verna, are living in W. Hyattsville. . . M.I.T.'s Instrumentation Lah. in Cambridge, Mass., is the location of F. Gary Augeri, a staff engineer... Roger R. LaFontaine is with Salvi Ford Sales in Cambridge, Mass. He lives in Arlington. . . Honeywell, Inc., in Wellesley Hills, Mass., is Paul R. Jolicoeur's employer. Paul and his wife, Diane, live in Westhoro. . . Edward E. Lindberg, associate professor of mechanical engineering and a member of the Western New England College faculty since 1963, has been named to direct the college's computer center. Ed, who received his MS from W.P.I. in 1963, is presently enrolled in the Ph.D. program at the University of Connecticut.

Born: To Mr. and Mrs. Sheldon W. Rothstein, their second child, a daughter, Deborah, on May 9, 1968. Sheldon is an attorney with Polaroid Corp. in Cambridge, Mass.

Seymour Davidson is a field underwriter for New York Life Insurance Co. with offices in Stamford and Trumhull, Conn. Sy's home is in Trumhull... Ralph M. Dykstra is a pilot for TWA... In December of '68 Troy Yarn & Textile Co. of Pawtucket, R.I., appointed John H. Herron manufacturing manager. . . Allen L. Johnson informs us that he is a selfemployed electronics engineer in Ithaca, N.Y... The president of Wolf Institute Electronics in College Station, Tex., is William A. F. Maertens. Bill says, "We design, fahricate, repair and maintain lahoratory instruments for Texas A&M University." . . We have learned that Thomas L. Maloney, Jr. is now a registered representative with the firm of White, Weld & Co., memhers of the New York Stock Exchange, in Hartford, Conn. Tom lives in Torrington... John W. Powers, who received an MS in Environmental Engineering from R.P.I. in '65, is a project engineer with Tighe & Bond Consulting Engineers, Holyoke, Mass. . . Public Service Electric and Gas Co. (Newark, N.J.) has announced the recent promotion of Joseph N. Wrubel to senior engineer in the Electric System Planning and Development Dept.

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1962

Keyren H. Cotter, Jr. completed requirements for his D.Sc. in Materials Science at the University of Virginia in Fehruary and is now a research specialist at Lockheed-California Co., Burhank... The treasurer of Wiltek, Inc. in Wilton, Conn., is Joseph W. (Jay) Fitzpatrick, Jr. His home is in Norwalk. . . Syracuse University awarded Terry Furhovden an MS degree last year, and he is now project engineer-reliability with G.E. in Syracuse, N.Y... Paul W. Goranson is a student in the Dept. of Anthropology at the University of California at Santa Barhara. ... Tech Weld Corp. in Burlington, Mass. is the location of Walter W. Luikey, a project engineer. Walt earned his MBA

from Northeastern University in 1968. . . John H. Reynolds is with Comsat Laboratories in Washington, D.C. He is on the research staff... Sunny Florida is the location of Eugene A. Rheoult, senior electronics engineer for Martin Marietta in Orlando. . . The acting City Engineer in Marlboro, Mass., is Paul A. Shoron. Paul, a former assistant city engineer, had been employed as division manager and chief construction and design engineer for the Chas. Logue Building Co. in Needham. Paul and his wife, Cecile, have three children. . . The state of California employs Robert H. York as an assistant civil engineer in its Dept. of Water Resources, Sacramento. . . The senior civil engineer (traffic) for the New York State Dept. of Transportation's Div. of Traffic Engineering and Safety in Albany, N.Y., is Jomes F. Carrigan. Jim received his MS from R.P.I. in 1968. . . Analog Devices in Cambridge, Mass., employs Mortin L. Gross as an applications/sales engineer. . . William A. Krein is a traveling auditor for General Electric Co. in Schenectady, N.Y. His home is in Scotia.

1963

Born: To Capt. and Mrs. Peter Chutoronsky, Jr, a son, Peter III. Peter, who received his Ph.D. from Worcester Tech last June, will soon be separated from the U.S. Army and will return to the Mobil Research and Development Corp.'s Paulsboro (N.J.) Laboratories as a research chemical engineer in catalyst R & D.

Attleboro, Mass., is the location of Paul R. Conlin, Jr. He is with Texas Instrument Co. . . Roger E. Cray is a teacher at Worcester Industrial Technical Institute... Having received his Ph.D. from Stanford University last year, Robert M. Malbon is now a member of the technical staff at Hughes Aircraft Co. in Newport Beach, Calif. . . We have learned that Robert E. Maynard, Jr. is with New England Tel. & Tel. in Northampton, Mass. . . Former Marine Lieutenant John A. McGroth, Jr. is now a graduate student at the University of Massachusetts, Amherst... Continuing with General Electric, Ronald C. Pueschel is now unit manager, rotary switch manufacturing, Accessory Equipment Business Section, at the Bridgeport (Conn.) branch... Leeds & Northrup in N. Wales, Pa., employs Henry B. Schroeder as a programmer. He lives in King of Prussia. . . Arthur E. Goddard, II, who received his MS EE from Montana State University in 1968, is a research engineer with Collins Radio Co. in Cedar Rapids, Iowa... A Ph.D. candidate in the Mechanical Engineering Dept. at the University of Illinois in Urbana is Peter F. Lilienthol, 11.

1964

Born: To Mr. and Mrs. Robert Rounds, Jr., their first child and son, Robert III, on January 30, 1969. Bob and his wife Geraldine live in Elma, N.Y. Moog, Inc. in E. Aurora employs him as a sales engineer. . . To Mr. and Mrs. Frank Barry Sylvio, a son, Barry Brian, on January 12, 1969. They also have a daughter, Allison Jean, also born on January 12, 1967. Frank is an associate engineer with General Foods Corp. in Dover, Del., where they also make their home... To Mr. and Mrs. Poul S. Krontz, a daughter, Valerie Lynn, on July 4, 1968. Paul is a development engineer with Pratt & Whitney Div. of United Aircraft Corp. in E. Hartford, Conn.

Ronald J. Gemmo is a radar systems engineer for Raytheon Co. in Wayland, Mass. He and his family live in Framingham. . . The assistant division engineer for the Public Service Co. of New Hampshire in Lancaster is Robert J. Lottero. . . Dovid T. Stone writes that he and his wife Nancy and their children, Kristina (3) and Kevin (1) are living in Foxboro, Mass. David is working as a development engineer at Allis Chalmer's Boston plant, where power circuit breakers are developed and manufactured. He is also attending Northeastern University evenings for his MS in E.E... Arthur D. Little, Inc., in Cambridge, Mass., is where David F. Beaber works. Dave received an MBA from the Wharton Graduate Div. of the University of Pennsylvania.

1965

Married: Richard B. Kennedy to Miss Mary Ann E. Manning of Tyngsboro, Mass., on July 27, 1968. The best man was Dick's brother, Francis E. Kennedy, Jr., '63, and the ushers were Paul S. Kennedy, '67, another brother, Philip B. Ryan, John T. Hart, Patrick T. Moron, and Chorles J. DeSimone, Jr. The father of the three Kennedy alumni is Francis E. Kennedy, Sr., '30. Dick is living in Boxborough and working as a salesman for IBM in Worcester.

Born: To Lt. j.g. and Mrs. Robert B. Edwards, their first child and son, Robert, on February 11, 1969. Bob is stationed at Mare Island Naval Shipyard, Vallejo, Calif. and is on the instructor staff at Nuclear Power School... To Mr. and Mrs. Kenneth W. Terry, their second child and first daughter, Tracey Elizabeth, on November 22, 1968. Ken is still working as a research engineer in the acoustic research section of Research and Development at General Dynamics Electric Boat Div., Groton, Conn.

We received the following note from Lee A. Chouinard: "I have been drafted

into the Army and am now undergoing basic training at Fort Bliss, Tex." . . The Empire Electrical Co. in Medford, Mass., employs Oscor G. Cook, III as a sales engineer... Richard C. Fortier is employed as a research engineer for AC Electronics R&D Lab in Wakefield, Mass. He plans to enter Northeastern University in September for his Ph.D. in M.E.. Jomes B. Gustofson is a systems analyst for Air Products & Chemicals, Inc., Allentown, Pa. He and his wife, Dorothy, live in Breinigsville. . . Continuing his studies at New York University, Thomas E. Pease is a candidate for his Ph.D. in oceanography. . . Another Ph.D. candidate is Dovid M. Schwaber. He is at the University of Akron (Ohio).

1966

Morried: Eugene B. Wilusz to Miss Nancy Balut of New Bedford, Mass., on July 4, 1968. Gene received his MS in chemical engineering from M.I.T. in January, 1968, and is now a graduate student in the Dept. of Polymer Science and Engineering at the University of Massachusetts... Thomos J. Mortimer to Miss Mary Jane Chiarenza of Methuen, Mass., on March 29, 1969. Among the ushers were William F. Nickerson, '65, and Kendall W. Gordon, Jr. Tom is employed by Sanders Associates, Nashua, N.H.

Newly-promoted Lt. Russell W. Edmands is a data systems analyst in the Management Science and Data Systems Office at the Maryland headquarters of the U.S. Army Test and Evaluation Command. Russ received his MS in management from R.P.I. in 1967. . . Riley Stoker Corp. of Worcester employs Anthony Simulynas as an engineer in Applied Research and Development. . . Lt. j.g. John B. Toto left the USS Marysville in January for duty on the USS Chowanoc, where he is second in command. Now stationed in San Diego, Calif., John is due to go to Vietnam in August... Boston, Mass., is the location of Ching-Soo Liu, MS, who is a structural engineer for Charles T. Main... Continuing with General Electric, Richard B. Nelson has been named to a new marketing position in the Installation and Service Engineering Dept. in Schenectady, N.Y.

1967

Robert E. DeNigris is a mathematics instructor at New York Institute of Technology, New York City... Dr. Lee E. Estes, MS. of W.P.I.'s E.E. Dept., was recently promoted to assistant professor... Waltham, Mass., is the location of Russell A. Lukes. He is an application analyst for Control Data Corp... Having

Don't Miss

Homecoming, October 18, 1969

Fall Sports Schedule

U.		VARSITY FOOT	BALL SCHEDULE		-		VARSITY SOCO	ER SCHEDULE	
Sept.	20	Union	Home	2:00 p.m.	Sept.	27	Hartford	Home	2:00 p.m.
и.	27	Bowdoin	Away	1:30 p.m.	Oct.	1	Holy Cross	Home	3:30 p.m.
Oct.	4	Middlebury Bates	Home	2:00 p.m.		4	Tufts	Away	2:00 p.m.
	11		Away	1:30 p.m.		8	M.I.T.	Away	
	*18	Wesleyan	Home	2:00 p.m.		14	Lowell	Away	3:00 p.m.
	25	Coast Guard	Away	2:00 p.m.		*18	Clark	Home	11:00 a.m.
Nov.	1 8	R.P.I. Norwich		1:30 p.m. 1:30 p.m.		21	Assumption	Home	3:30 p.m.
			Home			25	Coast Guard	Away	11:00 a.m.
			Away			28	Mass. U.	Home	3:00 p.m.
		•				30	B. U.	Away	7:30 p.m.
					Nov.	5	A.I.C.	Away	2:30 p.m.
Home	ecoming	g							

ompleted requirements for his MS degree n nuclear engineering at Texas A&M Iniversity in January, Robert G. Mc-Andrew has entered U.S. Navy OCS in Newport, R.I. . . A field engineer for ombustion Engineering, Inc., Mukundray V. Patel, MS, is presently located in New Florence, Pa... We have learned that Charles F. Proctor is a test engineer for AVCO, Lycoming Div., in Stratford, onn. . . We have learned of two memers of the class who are graduate stulents at R.P.I. in Troy, N.Y .- Kenneth H. Rex and Harry E. Taylor. . . We reeived a letter from Robert D. Watkins. 'I am a first lieutenant in the U.S. Field Artillery serving with Bravo Battery, 2nd Battalion, 94th Artillery located in he northern portion of South Vietnam. My position is senior fire direction officer or Bravo Battery. . . I will be joining the civilian world in Sept., '69," he writes. . . The U.S. Army Electronics Command at Fort Monmouth, N.J., is the location of John F. Armata, Jr., MS. John's home s in Long Branch... Having received his Army discharge last year, Joseph J. Cieplak is now employed by USM Fastener Co. in Ansonia, Conn., as a research lab technician and is attending night classes at New Haven (Conn.) College. . . Attending graduate school at Clark University in Worcester is Phillip J. Clark.

1968

Married: Joseph A. Borbone to Miss Rosalie K. Borek of Worcester, Mass., on February 8, 1969. John D. MacDougall, Jr. was best man. Joe is a mechanical engineer for Heald Machine Co., Worcester. . . John J. Korzick to Miss Mary La Paglia of Ansonia, Conn., on June 22, 1968. John is also with Heald, in sales engineering. . . William J. McCann, Jr. to Miss Louise Marie Damigella of Holliston, Mass., on March 1, 1969. Bill reported for active duty in the Army on May 18, with the rank of second lieutenant. . . Paul F. Stasko to Miss Marina G. Woitusch of Webster, Mass., and Weiden, Germany, on February 16, 1969. Paul is a design engineer at the Portsmouth (N.H.) Naval Shipyard. . . Richard J. Weeden to Miss Betty Sargent of Sterling, Mass., on November 9, 1968. Dick is an engineer with Raytheon Co. in Portsmouth, R.I. . . Peter A. Saltz to Miss Susan J. Edelstein, on June 30, 1968. Pete is presently in New York attending the University of Rochester Graduate School of Electrical Engineering. . . Bruce G. Lovelace to Miss Karen Joyce Spencer of Framingham, Mass., on October 19, 1968. Best man was Francis W. Maher, Jr. and William P. Stanton was an usher. The Lovelaces now live in Midland, Mich., where Bruce is employed by Dow Chemical Co. as a production development engineer in the styrene derivatives section.

Several '68's are in the service. Among them are: Army 2/Lt. John H. Clinton, 2/Lt. John W. Elphinstone (at the U.S. Army Air Defense School, Fort Bliss, Tex.), Richard G. Perreault, Army Pvt. Richard A. Westsmith (in Vietnam), 2/Lt. Richard Kung (at Keesler AFB, Miss., for training as a communications officer), 2/Lt. Ronald D. Rehkamp, USAF (assigned to the University of Michigan for training as a weather officer), and 2/Lt. Lee J. Solaroli, USAF.

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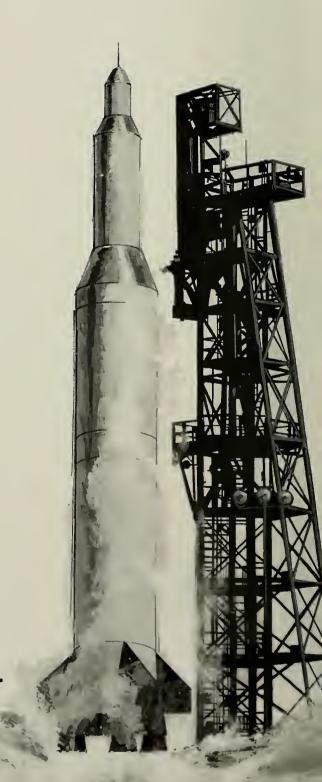
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Volume 73

Fall

Warren B. Zepp, '42

Editor and Business Manager

Stephen J. Hebert, '66
Assistant Editor and Business Manager

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Stephen James Hebert, '66 Assistant Alumni Secretary

It is a pleasure to introduce to you Stephen J. Hebert, '66, the newly-elected Assistant Alumni Secretary. Steve will fill the position left vacant by Roy A. Seaberg, '56, who, after

seven years with the Association, has become an Assistant Director of Admissions at Tech.

Steve was born in Boston, Mass., and moved to Springfield, Vt., at an early age. He attended Springfield High School prior to his entrance to Tech in the fall of 1962. He majored in civil engineering, receiving his B.S. degree in 1966. While at Tech, Steve was very active; he was president of Skull, the senior honorary society; chairman of the Assembly Committee; vice president of his fraternity, Sigma Phi Epsilon; President of the Student Chapter of A.S.C.E.; Business Manager of *The Peddler*; and Treasurer of his class.

After graduation, Steve joined the staff of Springfield (Vt.) High School. He taught mechanical drawing and physics, coached football and basketball, and was also acting athletic director this past year.

We hope you will have a chance to meet him personally in the coming year.

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THE JOURNAL

Dr. George W. Hazzard Inaugurated

As Eleventh President Of W.P.I.

Dr. George William Hazzard was inaugurated as the eleventh President of Worcester Polytechnic Institute on Friday, October 17. The well-planned and stately ceremony was attended by approximately 250 delegates from sister institutions of higher learning and by a large delegation of trustees, administrators, faculty, alumni, and friends. Dr. Hazzard's inauguration was the first to be held in Harrington Auditorium and was preceded by a luncheon in Morgan Hall for 850 people.

The Reverend Raymond J. Swords, S.J., President of the College of the Holy Cross, gave the Invocation and Benediction, and the Honorable Francis W. Sargent, Governor of Massachusetts, extended the greetings of the Commonwealth. Professor George E. Pake of Washington University in St. Louis, Mo., and a long-time friend of Dr. Hazzard's, introduced the President, after which Dr. William E. Hanson, '32, Chairman of the Board of Trustees, gave the charge to the President and presented him with the school seal. Music was provided by the Worcester Intercollegiate Symphonic Band and a combined chorus from the Worcester area.

Following the ceremonies, a reception was held on the quadrangle.

President Hazzard's Inaugural Address follows:

Ladies and gentlemen, delegates from colleague institutions and societies, members of the Worcester and Worcester Tech community, Governor Sargent, and friends, friends new and old. Thank you for coming. Thank you for honoring Worcester Polytechnic Institute in its 104th year.

The presence here of so many friends or mine and of the college makes this a heart-warming moment for me, a moment I shall long remember.

The responsibilities I accept from students, faculty, alumni, and trustees make this a challenging moment. It is a moment for facing and interpreting the task I have been asked to undertake.

The very personal nature of this small institution makes this a moment for direct personal expression of my present views on engineering education. It is the moment for saying that I believe engineering education is better called technologically-based education and explaining why.

It is a moment for talking about a professional school and for reiterating the values implicit in the use of the word professional.

Finally, it is a moment for humility. A scientist knows that he can only see further because he stands on the shoulders of those who labored before him.

Today man is where he is only because so many previous generations of men thought, and said, and did things that inspired others to improve on what went before. All men have related such efforts to some view of the world — how the world is or how it ought to be.

What I propose to discuss is my view of how the world is or how our society is and how engineering education, technologically-based education, professional education, can serve that society. In so doing, I am asserting a philosophy of higher education as applied to Worcester Polytechnic Institute and suggesting some implications of that philosophy for the Worcester Tech community.

Society today is technologically-based. No one can deny the evidence of instant communication after the Apollo 11 moon walk. Or of almost instant transportation after lunching in London and dining in New York. Or of an incredibly interdependent technical distribution system when eating fruit from Texas or Israel while stuck in a Manhattan elevator in a power blackout. In a sense, the medium of modern technology is the message.

Such being the case I believe technologically-based education provides a major hope for the creation of an informed citizenry able to act on and be aware of the problems of this modern society. But a very special kind of technical *education* is required — an education that will produce *technological humanists*.

For what technological humanism means I am indebted to Sir Eric Ashby and his illustrious countryman, Alfred North Whitehead.



As Ashby says:

"The habit of apprehending a technology in its completeness: this is the essence of technological humanism, and this is what we should expect education in higher technology to achieve."

And Whitehead explains this further. He says:

'There is something between the gross specialized values of the mere practical man, and the thin specialized values of the mere scholar. Both types have missed something; and if you add together the two sets of values, you do not obtain the missing elements. When you understand all about the sun and all about the atmosphere and all about the rotation of the earth, you may still miss the radiance of the sunset. There is no substitute for the direct perception of the concrete achievement of a thing in its actuality.... A factory, with its machinery, its community of operatives, its social service to the general population, its dependence upon organizing and designing genius, its potentialities as a source of wealth to the holders of its stock is an organism exhibiting a variety of vivid values. What we want to train is the habit of apprehending such an organism in its completeness."

In other words, the person with a technologically-based education must do more than the scientist. The scientist has to preoccupy himself with abstractions from reality for that is the power of science. The engineer has to respond to the assertion that he is a professional. For any professional

school, be it medicine, or law, or engineering, produces graduates dedicated to service to society. Its graduate must be concerned with the whole reality, including real people.

Since Worcester Polytechnic Institute is one of less than two dozen private technical universities in this most technically-oriented of countries, it behooves us to respond vigorously and creatively to such a challenge.

To educate technological humanists is to respond to several aspects of modern society — to science and its evolutionary building of a more complete explanation of nature on earlier, less general paradigms; to the young and their intuitive, but expressed, wish for greater individual self-realization; to the problems of the real world where the very successes of science and technology in solving old problems have created a whole set of new ones; and to the developing knowledge from the social sciences on how people learn.

Once upon a time, I was a scientist. So let me start with science. As every scientist knows, science is a stimulating and frustrating mix of the radical and the conservative. Each new idea has the potential for completely changing the existing state of affairs (though rarely now does a scientist get tried by the Inquisition as did Galileo for his ideas coming from mechanics and optics). But simultaneously each idea must stand the test of practicality. Can it explain information that was known before while simultaneously predicting and explaining the knowledge implied

by that idea?

Thus a person with scientific training is automatically a radical and a conservative in his own field once he is creative enough to have new ideas. Every radical new idea has to stand the conservative test of fitting the facts or being operationally sound. Scientific training enables one to learn how to live with change yet relate it to the past.

Simultaneously the scientist must develop a set of values. He must be truthful; for others check his facts. He must share his knowledge with others; for they have shared with him. He must give credit to others for the ideas on which he builds; as they must credit him. If this all sounds like the Golden Rule, it isn't very surprising. Science really burgeoned when Puritan man decided that investigating and elucidating Nature's secrets was the best way to glorify God.

The study of science and its methods must be part of the education of a technological humanist.

Now how about the problems of the real world stemming from our on-rushing technological advances? Here I must join Lee DuBridge, Science Advisor of President Nixon, in saying that "Success has led only to rising expectations and to mounting accusations of failure. Or so it seems."

Actually a greater fraction of the world's population is better housed, better fed, and has better health than ever before in history. Yet all of us want everyone to participate in these advantages. And all of us want better solutions to housing, transportation, pollution, war, and above all, the threat of the bomb.

Technology holds the key to possible solutions if it can be combined with the developing knowledge of the social sciences and the mutual respect and understanding between individuals and groups that comes from shared values. And here I repeat, technology can provide the *means*. Each of us must provide the social and ethical understanding. No longer can engineering education be undertaken as an escape from the reality of people. Not many of us can fulfill Walter Lippman's wish, "I'd like to have been born a great mathematician or something like that where I would have dealt with problems that didn't require dealing with the everlasting persnickitiness of human nature."

The study, understanding, and use of the social sciences and the humanities must be part of the education of the technological humanist.

Neither the great ordering principles of physical science nor the growing understanding of groups or individuals by social science provide evidence to modern youth that each person can remain a person and not become a thing, a number, a pawn on an overpopulated world chessboard. The great gatherings at Newport, Bethel, or Lewisville speak to that need to be someone; to be real to someone else; to share emotions like love and kindness. Or in other words, our higher educational system must respond to this need; must show that scientists and engineers are individual and

... AN EDUCATION THAT WILL PRODUCE TECHNOLOGICAL HUMANISTS

human; that they work in a value system of individual contribution for the good of all.

What this means is that each student needs to be helped to find his own way to the conclusion of his college education. Each individual student will be a wool thread held by the wrap of faculty guidance, all together forming the brilliant woven patterns of the university. Being different from all others but part of a total pattern seems a necessity for all of us.

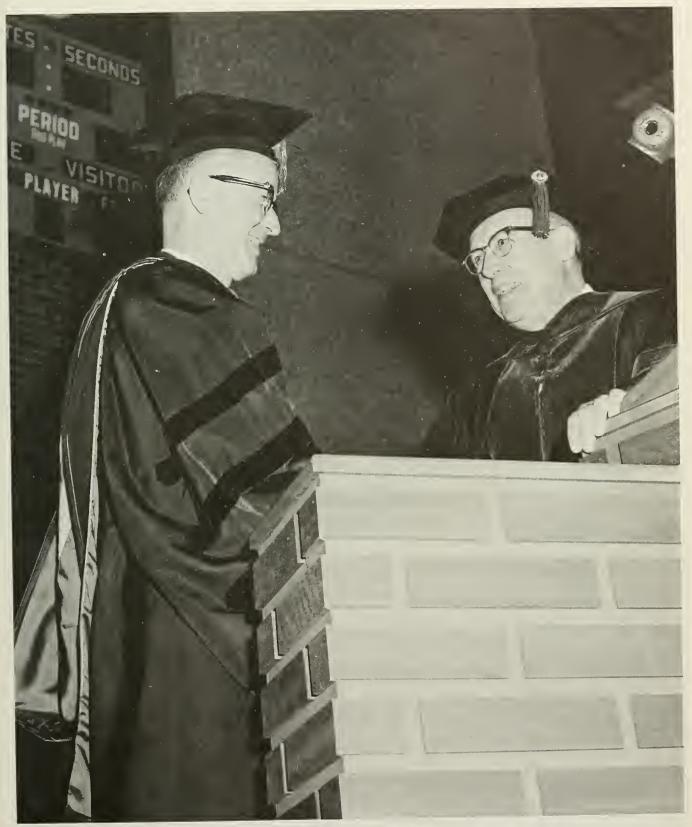
Personalized and individualized teaching and learning must be part of the education of the technological humanist. All of the above needs might never be met by a technical institution like W.P.I. were it not for technology and science itself. Here I refer to the considerable progress now being made in that difficult and complicated area called "the learning process." Much of the activity is directed toward young children for purposes of simplification; toward simple cognitive or tactile situations. Yet progress in understanding is considerable.

Conscious experimentation with the learning process must be part of the education of the technological humanist. Only thus can be learn and learn how to continue to learn in this world of accelerated change.

These four main trends form the challenge to any technological university. How do we combine broad general principles, real social problems, individual learning, and optimal teaching-learning methods into a coherent, recognizable, unique whole? This challenge is one I believe W.P.I. is ready to accept. One to which it will rise in the first decade of its second century.

Let me now turn to some possible methods for reaching these goals at W.P.I., methods which may combine here into a distinctive kind of technologically-based education. What I say here has already been said in part to the W.P.I. community but not to all that community at the same time and place. Presumptuous this may be after three months on the job, but non-squeaky wheels get little grease.

Many of these educational objectives are best reached by operating a small institution, a college where students and faculty and administration can know each other as people rather than symbols, as individuals rather than as "they". With an undergraduate population of less than 2,000 we are a small college by today's standards. It is imperative that we remain small and that our student body and faculty continue and extend the friendliness and



Dr. William E. Hanson, '32, Chairman of the Board of Trustees, congratulates President Hazzard.

participation already here. I must confess that I don't have a really good definition of smallness. But I can say that a college remains small until it starts breaking apart into units without common loyalties or until faculty members start saying there are so many students that they can't know a large fraction of them so they won't try to know any.

At the same time, one has to deal with the knowledge explosion and the consequent growth of specialization. Smallness may deprive a student of many opportunities that exist in a large institution. We must in many ways be large. Luckily the situation in Worcester permits us to be both small and large simultaneously. After all there are over 13,000 students enrolled in Worcester institutions of higher education today, institutions different in character, education objectives, specialties, and student background. With this size, produced by ten institutions, all essentially within 15 minutes of each other, we have a tremendous opportunity to provide the qualities of the large institution.

With the formal incorporation of Worcester Consortium for Higher Education and the employment of a full time executive director, we are well on our way in this respect. I look forward with pleasure to the results of our mutual enthusiasm for this consortium. It is especially rewarding to continue this effort pioneered by my predecessor, President Storke.

We shall remain small within the matrix of a large institution. But large or small, we can still miss the close student-faculty interaction that is one of our major goals if faculty commitment and internal organizational mechanisms are not there. Here is where we have already made real progress. Our Planning Committee has been working for almost a year on meeting the goals I have outlined. Involving faculty, students, and administration, the committee has produced what I consider to be creative answers. These answers were discussed intensively and constructively by over 400 members of the Worcester Tech community on Planning Day II just two weeks ago.

Let me outline the major points to show one way to be creative In American higher education. First is *individual* student program planning through four years with the same faculty advisor to develop and carry out each student's course of study. Second is the emphasis on individual study through seminar, library, or on the job activities. Large lectures there will be but the lecturer will focus on an integration of facts and ideas into a creative whole.

Third is the use of project activity for over a quarter of the student's academic work. Projects of two kinds are envisaged: those typical of a disciplinary orientation within the college laboratory or classroom and those oriented to the societal activities of engineers in the outside world. Here in groups of 3 to 5, students with a faculty leader can do relevant, constructive, and challenging activities. Students and faculty will have to learn together. Additionally we hope to involve many alumni in these projects — a life-long laboratory school so to speak. You might say that

here we are combining the pragmatism of John Dewey with the idealism of Mark Hopkins. Finally, testing and examination will come from outside, providing each student and his teachers with a critical evaluation of his college achievement, of his preparedness to contribute to the society that will support him.

All these ideas, good in themselves, would be useless without a commitment from faculty and students. The faculty member must provide the model of a concerned, learning, dedicated contributor. The student must accept great responsibility for his own progress in return for his freedom to learn. I say to my faculty and student colleagues: This is a challenge I dare you to accept.

Most difficult of all, I expect, is adopting new learning and teaching techniques and then measuring our success in their use. Even if we succeed in introducing new learning methods or "improve" on the old, how are we to know whether we do better or worse in creating a graduate fitted for his chosen role in society? How do we know if just change in itself is not the most effective learning stimulus?

Measuring the effectiveness of education is an elusive thing at best. Here, then, is a challenge to the expert measurers and to the foundations or to our federal agencies. Who can measure our success or failure and who will support them in the process?

In this present time of social stress, the universities are under pressure from students for relevance, from the government for problem solving, from parents for being too expensive and contentious. You may have wondered why I have not said more about such matters. Implicitly I have, but let me be explicit.

The business of W.P.I. is to be an educational institution. It is *not* a consulting firm, a baby-sitter, or a research institute. It cannot be a political instrument, an arm of industry or government. It must look at each part or problem of society and selectively utilize it for the education of the men and women who choose to come here. Only thus can a private, independent, technologically-oriented university college justify its existence. Only thus will it continue properly to deserve the support of parents, alumni, business, foundations, government, trustees, and friends.

I have shared with you some hopes and dreams for Worcester Tech and its people. How well we shall succeed I cannot tell. But I doubt we shall fail if I can do as Robert Frost said:

"When I was young my teachers were the old.
I gave up fire for form till I was cold.
I suffered like a metal being cast.
I went to school to age to learn the past.
"Now I am old my teachers are the young.
What can't be moulded must be cracked and sprung.
I strain at lessons fit to start a suture.
I go to school to youth to learn the future."



Left: Left to Right - Mrs. Anne (Hazzard) Trenholme, Dr. George W. Hazzard, Miss Ruth Hazzard, and Mrs. Jean Hazzard.

> Below: Left to Right, Paul S. Morgan, Trustee, Charles C. Bonin, '38, Trustee, and President Hazzard.



HOMECOMING 1969

LARGEST AND BEST EVER



Courtesy - Worcester Sunday Telegram

A windy autumn day set the scene for the 1969 Homecoming celebration. The Sweetwater concert and fireworks which were held Friday night had been a good omen for the next day's activities.

Registration began early, and by the time the soccer game had started at 11:00 A.M. the baseball field had begun to fill with cars. The soccer team lost its contest to Clark 2-0. Over 400 alumni and families registered for the combined tailgate picnic and barbecue. Trunks were raised and tailgates opened with groups gathering to renew old friendships. The tailgate prize for the best spread of food, awarded for the first time this year, was shared by Carl W. Backstrom, '30, and Iving James Donahue, Jr., '44.

The football game with Wesleyan was the highlight of the afternoon. Coach Mel Massucco and his squad gave the crowd of over 4,500 many exciting moments in their losing cause to Wesleyan 21-13. The Engineers generally out-played and out-hit the visiting undefeated Cardinals, but were hampered by miscues. At half-time, Warren B. Zepp, '42, Alumni Secretary-Treasurer, awarded the Homecoming Display Trophy to Sigma Alpha Epsilon fraternity, with Sigma Phi Epsilon receiving honorable mention. The freshmen won the annual Freshman-Soph Rope Pull following the game.

The Reunion of the classes of '59-'63 was held following the football game in the form of a social hour in the Janet Earle Room of Alden Memorial Auditorium, and there was a large turnout for this inaugural event.

Homecoming continued as various groups gathered to return to their fraternity houses or to have dinner at local restaurants. For those who desired, there was a concert Saturday night featuring Richie Havens and a Sunday concert featuring the New York Jazz Sextet.



Courtesy - Worcester Sunday Telegram



Courtesy - Worcester Sunday Telegram

Left: Richard Lucey, '55, and his family enjoy the tailgate picnic.

The Future of Two Towers



A MODEL

The faculty Planning Committee has published its third report containing a model for the future of Worcester Tech. The committee consists of Professors John P. van Alstyne, John M. Boyd, William R. Grogan, '46, Charles R. Heventhal, Romeo L. Moruzzi, and C. William Shipman. Stating "It should be the goal of the Worcester Polytechnic Institute to teach its science- and engineering-oriented students to learn for themselves and to develop in them an understanding of the interplay between technological advance and human need," the report proposed a radically new unstructured curriculum which would emphasize projects and independent study and the relationship of technology to society. Under the new model, the present academic departments would be abolished and replaced by "Study Groups," which would be based on common areas of study.

The Committee proposed the following goal for Worcester Tech:

"It is the goal of Worcester Polytechnic Institute to bring into the second century of its existence a new, dynamic version of its great Two Tower tradition. In its first century, W.P.I. pioneered the integration of science and shop; in its second century, W.P.I. will pioneer in scientific service to society.

"The W.P.I. graduate of the future must have an understanding of a sector of science and technology and a mature understanding of himself and the needs of the people around him. While an undergraduate he must demonstrate that he can learn and can translate his learning into worthwhile action. He must learn to teach himself those things that are needed to make his actions socially significant. A W.P.I. education should develop a strong degree of self-confidence, an eagerness to contribute to the community beyond oneself, and an intellectual restlessness, a spur to continued learning."

To accomplish this goal, the report outlined an educational program featuring no required courses. In the words of the report, "Because a primary objective of the college should be to teach the student to learn, and because this process is highly individualistic, it seems advisable to have as little formal curricular structure as possible. The lack of structure has the virtue of providing at once the flexibility needed and the requirement that the student develop the self-reliance characteristic of a truly educated person."

To accomplish this, projects and independent study programs will play a major role and the student is expected to put a minimum of 25% of his total academic work into this part of the program. Two types of projects will exist:

- a) Research and development projects of the type common to most technical college research programs.
- b) Humanistic-technological projects. In the words of the report, "Examples of these projects might be: the effect of a new north-south toll road on the people of central Massachusetts; the economic, technical, and social implications of a law restricting pollution of the Blackstone River; . . . It is this type of involvement which is designed to bring the student to a familiarity with technology as a service to society, leading him to a sense of professionalism in the sense of assuming responsibility for some area of society's needs, and showing him the relevance of his studies of human behavior."

It is also suggested that "a fair fraction of the projects be centered off-campus."

The projects would come in four different sizes: Type A: Individual Work; Type B: Individual Team Projects: three-man units; Type C: Comprehensive Project Activities: two sub-units of three to four students each, combining upperclassmen with underclassmen and/or technical and humanistic efforts; Type D: Systems Project Divisions: Groups of fifteen from a variety of levels and study interests

Upperclassmen and graduate students would be in positions of leadership.

Courses would be offered to "bring coherence to what has been learned in the projects... and to lead the student from the curricular disciplines of the American secondary schools to the unstructured system proposed."

Three main types of courses would be offered:
a) Courses designed to supply preliminary information and a transition to W.P.I.'s unstructured system; b) Short courses of the "how-to-do-it" type to aid in acquiring specific techniques as they are needed; c) Summary courses. These would be of the lecture-supervision type. A lecturer would present the material to a hundred or so students and a supervisor, meeting with four students at a time, would answer questions and go over solutions to specific problems.

No prerequisites would be required for a course.

Professor Shipman, a member of the Faculty Planning Committee, commented that one critical point in the aca-

demic program would be the transition of the Freshmen from a structured high school background to an unstructured college. He said that the kinds of freshman courses would have to be a lot different from the present courses, and would have to be designed to lead a student to learn on his own, and that a freshman would be involved in project work. He suggested that such courses as "The Philosophy of Science" and "The History of Science" might be appropriate.

In regard to the student body in general, he stated his belief that a "much larger percentage of the present students could handle the suggested program than the faculty believes." He also felt that we could attract students from a much wider area than we do presently.

Although only the degree of Bachelor of Science would be given, students will be able to "major" in a Study Group or Division Area. This quote from the report may help explain the Committee's concept of study groups:

"Because of the problem orientation of the program and the increasing overlap of the various traditional disciplines, it seems wise at this point to abandon the departmental structure of the faculty and to regroup into common areas of study - Study Groups. It is not to be inferred that there need be any permanence to a Study Group, for in the course of time it will be necessary to dissolve some and establish others. The Dean of Academic Resources must bear the ultimate responsibility for seeing that the Study Groups remain relevant. It is important to recognize that the common denominator in the Study Groups is the problem orientation rather than the academic background of the members. The Study Groups are collected into three divisions."

The following degree requirements were suggested:

- 1. "Acceptable advanced-level work on two projects or independent study programs. a) It is strongly urged that at least one be of the humanistic-technological type. b) It is strongly urged that at least one of the qualifying projects be centered off-campus.
- "Advanced level work must produce a tangible result (usually in the form of a written report) which shall be judged not only for technical content but also for manner of presentation both by the project supervisor and external examiners . . . Grades will be assigned for all project work as follows: A-Acceptable; AWD-Acceptable with Distinction; NA-Not Acceptable.
- "A minimum residence of two years is suggested because of the importance of the environment to be established."
- 3. "Examinations: a) A comprehensive examination in a division or study group area. This examination may include oral as well as written parts, should be of the "open library" type, and must be the work of the student alone... the examination should confront the student with the unfamiliar. b) Two "sufficiency" examinations in areas

other than that of the comprehensive, at least one of which should be in a different division from that of the comprehensive.

"Grades for these examinations will be A or AWD (an unsuccessful attempt is not recorded) and the examinations may be taken at any time after matriculation with the approval of the student's advisor."

ADVISOR EXPLANATION

A different part of the report explains the advisor. "The entering student is assigned to an advisor who sees the student through the program... it is essential that the student records be computerized so that the advisors can have at hand all information for counseling the student. Obviously, the project supervisor may have the best and closest contact with the student and can give considerable assistance to the advisor. The exact relationship of the student to his advisor will depend in large measure on the student living group structure."

Provision is made in the model for the expulsion of a student "who consistently fails to do acceptable work."

The school year would be divided into four eight-week terms for "flexibility in course offerings, project-logistics, and scheduling." The student would carry "four units of work" each term (for example, three courses and one project [not including how-to-do courses], four courses, etc.). Courses would extend from one to four terms.

The above academic program was reached after seven months of deliberations by the President's Planning Group during the last school year. During that time they studied Tech's present status, developed a set of possible objectives, and published a set of two reports, "The Future of Two Towers," Parts 1 and 2. Then, during the summer, the fac-

ulty - elected Planning Committee created the program above.

One of the reasons why they chose to try to educate a "humane technologist" was, in the words of the Report, "a growing feeling throughout the nation that many science and engineering educators have become so concerned with a narrow form of professionalism that they fail to react adequately to disturbing signs . . . For a decade we have seen a loss of interest in engineering on the part of high school students; the disenchantment of students enrolled in engineering programs is notorious; and we have heard much about the importance of relating science and engineering to the needs of the people." Another was in the form of a conclusion: "the major contribution of the independent college is to leaven the national educational scene with diversification and a source of innovative energy which lies beyond the capability of the public institutions."

The failure of the present structure was also cited as a reason.

"Attempts to broaden the student by offering, and even requiring courses in the humanities have largely failed . . . because of the failure to show the students the relevance of their work in humanities to their professional careers. The student finds his learning activities more or less "locked in" to a course program and satisfaction of his curiosity hampered by a formidable set of prerequisites. A further factor is . . . isolation of the faculty from the students as people who have a view of life, who practice what they preach, and who themselves are continuously learning . . . students find campus life devoid of interest. Intellectual interchange is the exception rather than the rule." As one result of this, "the Committee had decided to relegate to an inferior position the argument that 'our students have limit-



J. M. Boyd Mechanical Engineering

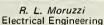


W. R. Grogan, '46
Electrical Engineering



C. R. Hevanthal, Jr.







C.W. Shipman Chemical Engineering



J.P. van Alstyne
Mathematics

ed capability.' This argument appears to be false and has so pervaded the thinking of both students and faculty that it has strongly affected the quality of W.P.I.'s present program."

The Committee then outlined what they felt were essential considerations in determining W.P.I.'s goal:

- 1. "It is hopeless to attempt to provide the student with enough information and technique to see him through a lifetime of professional work. It is far better to develop the student's learning capability so that he can learn what is necessary to solve the problem at hand to meet the unfamiliar situation competently.
- 2. "... society is being well supplied with technologists who, given time and money, can eventually solve nearly any technological problem from development of an antipolio vaccine to placing a man on the moon safely. However, decisions as to what technology shall be developed and what problems attacked are made by the lawyer, the sociologist, and the politician who are, for the most part, unaware of the nature of technology itself.
- 3. "The strongest motivating factor in student learning is the student's own interest . . .
- 4. "The essence of the college experience is the environment the nature of the community. There is no stronger motivation for intellectual development than the inspiration of one's associates. Delight in learning is infectious . . . there is not now a single college level program which has adequately come to grips with the challenge of developing and encouraging the necessary human understanding in its science and engineering students."

Professor Shipman outlined four criteria that he felt a program would have to fulfill, and that he felt the model did fulfill: 1) Students would be involved and responsible; 2) There would be a community of spirit; 3) It would have to be innovative enough to justify a private existence;

4) It would have to be flexible.

The report declared that, under this model, the following objectives of the original twelve listed in the first and second reports could be executed:

- High Quality Pre-Graduate Education in Engineering and Science
- Education for Leadership and Decision-Making in a Technological Society
- Classical Education in Engineering and Science in the Oxford - Cambridge Manner
- 5. Middle College
- 7. Educating the Underprivileged
- 8. Invention and Entrepreneurship

Objective 4 (Research-Oriented Graduate Center) was excluded because it was not felt to be attainable at this time and that there would be too much competition from such schools as M.I.T. The Committee rejected Objective 9 (General University) because they felt student support for this was mainly due to a desire to facilitate shifting to a different major field. The faculty Planning Committee felt that combining with Clark as a way of achieving a general university would not be an answer because there was no assurance that the simple act of combining would solve Tech's problems, there was a problem with the distance between the two schools, and that colleges which had combined had had problems combining departments. Objective 6 (Bachelor of Science Degree in Technology) was excluded because no one seemed to want Tech to become that type of a school.

According to Professor Shipman, this proposed program is unique. He did say that there were "precedents for any part of it," mentioning that one public high school in New York City had gone to an unstructured curriculum, but added that no program in any technical school has this orientation towards the "humane technologist."

Admissions:

An Important Role



Donald F. Berth '57

Don received his BS and MS degrees in Chemical Engineering from W.P.I. in 1957 and 1959 respectively. Since graduation he has been at Cornell University for a majority of the time, holding positions as Assistant to the Dean of Admissions, Director of Admissions in the College of Engineering, and Administrative Assistant in the College of Engineering. At present Don is Director of College Relations, College of Engineering, at Cornell and he is also National Chairman of the Alumni Admissions Program for Tech.



Kenneth Nourse

Ken is presently Associate Dean of Student Affairs and Director of Admissions at Tech. He received his Bachelors Degree from Middlebury in 1952 and became Assistant Director of Admissions at Clarkson College of Technology in 1953. In 1957 he moved to Rochester Institute of Technology as Director of Admissions, but he returned to Clarkson one year later as Director of Admissions. He held that position until 1965 when he joined the staff of W.P.I. as Associate Dean of Student Affairs and Director of Admissions.

PART I:

A VIEW FROM WITHIN

by KENNETH NOURSE

"DO YOUR THING '73"... so reads the pin handed to each member of the freshman class during registration. Whether or not they do will in no way remove the class from its position of being the largest freshman class in the history of the college. On September 8 we registered 637 of them. We were looking for 500. We had an overrun. In September 1968 we were looking for 450 freshmen and came in with 360. We were shy by 90. In one year, we increased freshman enrollment by a whopping 80%. Why?

The summer of 1968 was particularly long and particularly hot for Admissions. It was agreed that a repeat of the low frosh enrollment of 1968 would be unacceptable... a euphemism for disastrous. An Admissions game plan was developed in outline form identifying five general areas and encompassing 27 specific approaches. The plan was reviewed with the Trustees at the Worcester Club in October 1968. It was suggested that if the plan worked in its entirety we might have an overrun. Trustee Fran Harvey commented that such a problem would be welcome.

It is difficult to single out particulars because we were operating with so many variables. However, I can mention some educated guesses that will probably stand up. Our financial aid allotment was increased substantially. This was extremely important because it helped us regain a competitive position. We were able to make it possible for more of the better students to come. We were slipping badly in this area. The tuition shows a recent history of increasing on alternate years, but the financial aid allotment remained static. Hence, we were regressing. We now have an understanding that financial aid is a critical factor in the admissions activity and hope we shall be able to maintain our regained momentum.

The Early Decision program was given special attention and the number accepted under this plan more than doubled from a year ago... 139 as opposed to 60. Financial aid was offered to this group in sizeable amounts for the first time. Highly qualified candidates with or without need who indicated that W.P.I was a strong first choice were "in the fold" as early as December 15.

The number of "risk" students was doubled to 30. This is a faculty-approved program to admit X number of candidates who appear to be statistically unacceptable but who, through a particular achievement or for one of a number of subjective reasons, seem desirable. Data on this group in the Classes of '71 and '72 indicates that 60+% are

working successfully toward a degree. In the Class of '71 (based on four semesters) the C.Q.P.A.'s range from 1.46 to 2.99. In the Class of '72 (based on two semesters) the C.Q.P.A.'s range from 1.75 to 3.44. This is a most interesting Admissions approach because it tends to prove that we should not overrate such things as College Board scores and counselor recommendations. All these students were encouraged to participate in a new five-week summer program (we called it Pre-College Study) of compensatory work in the verbal and math areas. The remaining members of the class were invited, but not encouraged, to participate. Twenty students were ultimately involved. Their experience will be carefully measured as they progress through the freshman year. As soon as meaningful data has been assembled, perhaps a report will be presented.

Our new degree programs and increased flexibility in the freshman curriculum have given us broader appeal. Many candidates who feel that a science-oriented education is timely and relevant are unable to pick specific programs of study so early in their educational careers. Our general to specific approach is very saleable and very sensible. The current flexibility available within the general boundaries of scientific orientation seems to be very appealing. Parents paying a tuition of 2,400 American dollars per year are pleased that there is lateral movement available. Guidance counselors, long used to the vicissitudes of teenage thinking, nod their heads in agreement when we explain our flexibility. But, most important, the bright, sensitive, articulate student seems to be appearing in Boynton Hall for a personal interview in greater numbers. If we can land some, and we shall, the faculty will find it timely to improve our climate for learning.

There is reason to believe that our required personal interview brought many more prospective students to the campus than a year ago. It may sound like schmaltz, but this campus does a pretty fair job of selling itself. In comparative terms, the place is immaculate. The maintenance people do an outstanding job and it is noticed by visitors. There is definitely a warm and friendly atmosphere throughout and in spite of our new age of liberalism it is obviously impressive. To give you some perspective, I quote statistics relative to campus interview traffic. The personal interview was not required for the Class of 1972. Between May 1967 and May 1968 we conducted 994 campus interviews. We then required a personal interview for the Class of 1973. From May 1968 to May 1969 we conducted 1,378 campus interviews . . . a 45% increase. We believe the interview serves three positive purposes:

- 1. it brings the candidate to the campus
- 2. it gives us a chance to explain our position in detail
- it serves as a quasi-declaration of intent on the part of the candidate.

I do not mean to infer that all was peaches and cream, but I more than infer that differences were resolved with-

out violence or without any interruption of the educational process. It is my observation that whoever is paying the tuition of 2,400 American dollars per year is pleased about that, too.

I am certain that there are other factors, but I cite these as major. As we set our sights on the Class of 1974 which will number about 550, we have already introduced a new variable in the form of a re-organized Alumni-Admissions Counselor program. It is intended to affect the quality and not the quantity of the Class of 1974. On paper, Bill Elliott and Don Berth have constructed a well-oiled piece of machinery. A year from now perhaps we shall be given the opportunity to report on its progress or lack of it.

Looking to the future we hope to continue working closely with the Faculty Committee on Disadvantaged Students chaired by Prof. Bourgault and the Ad Hoc Committee on Admissions chaired by Prof. van Alstyne. Both committees are proving to be very desirable reaction groups to ideas conceived in the Admissions Office.

PART II:

ALUMNI INVOLVEMENT

by

DONALD F. BERTH,'59

W.P.I. alumni may often feel that the only support they can give their alma mater is through their checkbooks. But another, equally significant kind of support may be provided by participation in one of the most critical activities of the Institute — the recruitment of quality students. To this end an alumni secondary school organization has been established. Its regional chairmen will hopefully serve as spark plugs; they will be responsible for organizing and sustaining an effective working committee of alumni. In the following paragraphs I shall try to outline the need for and the nature of alumni support in this most vital effort.

W.P.I. is essentially a specialist college, emphasizing undergraduate programs in the physical sciences, mathematics, and the major fields of engineering. In the past fifteen years there has been little or no increase in national student populations enrolled in these subject areas. Consequently, since college populations have more than doubled in this period, the proportion of students in these areas has been halved. At the same time, the number of undergraduate colleges offering work in the subject areas which Tech offers has increased by 25 percent.

These facts spell a number of consequences. First, it is harder to find a high school student who is interested in science or engineering than it was fifteen years ago. Second, it is harder to sell him on a private college in view of much improved state university programs in these areas. Third, he

is likely to cost more in financial aid than he did fifteen years ago.

W.P.I. has an outstanding admissions staff and a quality education. But, as many Tech men who have spent years in informal secondary school recruitment efforts can attest, it is still the localized, personal interest that an alumnus can give to a particular student that counts in the long run — catalogs, campus visits, and admissions officers interviews notwithstanding.

For the past seven years some of my professional attention has been directed to student recruitment for Cornell's College of Engineering. And one lesson is clear. The best schools owe much to the devotion and skill of alumni who seek and then sell the best prospects on the virtues of their alma mater and its programs. While the size of the alumni body, its geographical diversity, and a widespread public knowledge of a college all help its recruitment efforts, time and again I have witnessed the loss of valuable recruits because alumni were not "working" their areas as hard as other colleges were. On other occasions I have seen colleges win applicants because of efforts by enthusiastic, knowledgeable, honest, and skillful alumni.

The competition among alumni groups in the field is keen. And because of the increased organizational sophistication of many of these groups, it is essential that W.P.I.'s alumni get busy to gain for Tech its share of the best talent.

The alumnus whose participation as a committeeman is desired is the one who wants to lend a hand but is not sure of the best way to do it. Many have recognized the importance of student recruitment and, with little guidance or support, have already become involved in sponsoring dinners for area guidance counselors and helping in the interviewing of Tech applicants.

We need more men who are enthusiastic about W.P.I. and W.P.I. today. Not the college that they graduated from in 1934, 1948, or 1957, but W.P.I. today. This does not mean that recent graduates will be best as committee members, but that homework will be required. The alumni secondary school organizational framework will provide regional workshops for alumni at least once a year.

We need men who are genuinely interested in young people (both men and women) and who would like to be of service to those who might profit from their college experiences. And we need men who can seek out prospective Tech students, not perfunctorily, but imaginatively, in such a way that admissions representatives will find audiences acquainted with W.P.I. when they visit secondary schools.

Alumni in the field can be instrumental in multiplying efforts in student recruitment by several orders of magnitude. The general regard for W.P.I. alumni by secondary school personnel is of obvious value. By becoming well acquainted with the teaching and counseling staffs — particularly with the math and science teachers and college counselors — of a particular school, an alumnus can make his

name and presence synonymous with W.P.I. He can seek out superior secondary school prospects and encourage them to consider W.P.I. if their educational interests can be served through one of the Institute's programs. In addition, he can assist the W.P.I. Office of Admissions in the interviewing process by exploring and assessing the non-intellectual qualities of a candidate. He can sell W.P.I. to accepted candidates by personal follow-up and get-acquainted programs where numbers warrant.

Alumni have an important stake in the well being of their alma mater. If we do not see to it that more and more of the very best young minds and young leaders go to W.P.I., who will? And who will insure the value of our own degrees?

I hope that when you may be contacted by your area's regional chairman, you will be ready to say yes to his call for help.

ORGANIZATIONAL PLAN OF ACTION

Alumni Secondary School Organization

The first priority of the Alumni Secondary School Organization is to develop a quality organization that is prepared to do some work. Casual and ill-planned efforts yield complementary results. At the outset, the organization's efforts will be in areas where W.P.I. is known and where alumni live in some concentration. In some instances these regions will approximate chapter boundaries; in others they will transcend these boundaries. In no organizational way are the efforts of the secondary school organization tied to those of the chapters.

Executive Secretary: William Elliott, '66, Assistant Director of Admissions

The executive secretary is the contact man at W.P.I. for planning, staffing, and coordinating all "field efforts." He will:

- plan the annual workshops for regional chairmen and plan and schedule workshops for regional committeemen to coincide with admissions staff visits.
- have necessary materials (brochures, posters, flyers, etc.) prepared as required to maximize recruitment effectiveness.
- in essence, represent W.P.I. in all planning and coordination of alumni efforts and provide the oncampus continuity required to sustain this volunteer, part-time effort.

Regional Chairmen:

Their responsibilities include:

- 1. seeking W.P.I. alumni as committeemen.
- 2. planning regional workshops (assisted by W.P.I. admissions personnel).

- planning at least one luncheon or dinner meeting for guidance and/or teaching staffs in specific areas of their region annually.
- scheduling at least one major student recruitment meeting in each area of their region each year (coordinating and complementing ongoing programs of the chapters, the Society of Families, and the admissions office).

Regions	Regional Chairmen
Boston and North Shore	to be announced
Boston West Suburbs and	Charles Frary, '34
South Shore	,,
Connecticut Valley	Henry Nowick, '56
(Hartford and Springfield)	
Rhode Island	Robert Dunklee, '40
Northern New Jersey	Edward Peterson, '43
Southern Connecticut	Charles Walters '55
(Bridgeport, New Haven, Stamfe	ord)
Long Island	James Adams, '49
Mid-Atlantic (Baltimore	Walter Bank, '46
Washington, D.C.)	
Delaware Valley (Philadelphia,	Thomas Flynn, '30
Wilmington)	
Capital District (Albany,	Robert Fulmer, Jr., '51
Schenectady, Troy)	
Mid-West (Chicago, Milwaukee)	Leon Bassett, '51
Western Pennsylvania	Ken Parker, '61
Eastern Ohio	David Pratt, '56
Upstate New York (Buffalo,	Don Girard, '46
Rochester, Syracuse)	
Michigan	Edmund Judd, '50
New York City and	to be announced
Westchester County	

Concerned alumni will provide the "grass roots" contact for W.P.I. which will determine whether this secondary school student recruitment effort is a success or failure. The committeemen in each region (the number will vary depending on alumni concentration and secondary schools to be serviced) should become thoroughly familiar with the secondary schools in their area. About the one or two for which they will be responsible, they should know the teachers, counselors, and the outstanding juniors each year. The presence of each of these committeemen in a secondary school should be synonymous with the presence of W.P.I.

Won't you beat your regional chairman to the punch by writing to him (care of Bill Elliott, Admissions Office, W.P.I.) and telling him you can be counted on for support?

ANNUAL ALUMNI FUND REPORT — 1968-69

The following is a summary of the 1968-69 Annual Alumni Fund. Although the percentage of alumni participating was low — only 34% of our alumni contributed — a new record for individual gifts was set with a total of \$119,822 being contributed. In addition \$14,547 was contributed by companies with matching gift programs, \$132,124 was contributed to the college as unrestricted gifts, and \$245,753 was contributed as alumni bequests. Thus the total of *all* alumni giving to Worcester Tech for the period 1968-69 was \$512,246.

MEMBERS OF CLUBS

THE PRESIDENT'S CLUB

Earl C. Hughes, '14; Frederick R. Butler, '20; William E. Hanson, '32; Arthur E. Smith, '33; James J. Clerkin, '45.

THE DEAN'S CLUB

E. Donald Beach, '11; Arthur B. Schofield, '13; Ralph M. Johnson, '15; George W. Smith, Jr., '15; Moses H. Teaze, '17; Weston Hadden, '22; Wayne E. Keith, '22; J. Kendall Fullerton, '29; Arthur W. Knight, '29; Carl W. Backstrom, '30; Francis S. Harvey, '37; Charles C. Bonin, '38; George W. Knauff, '41; Irving James Donahue, Jr., '44; Robert C. Wolff, '51.

THE JOHN BOYNTON CLUB

Frank S. Nutting, '00; James J. Shea, '12; Edmund K. Brown, '13; Frank G. Gifford, '16; E. Leland Durkee, '19; George R. Rich, '19; Helge S. Johnson, '24; Luther B. Martin, '25; Milton E. Berglund, '26; Dwight E. Jones, '28; Russell C. Wiley, '29; Aram Kalenian, '33; Leonard G. Humphrey, Jr., '35; Frederick W. McIntyre, Jr., '35; Richard F. Burke, Jr., '38; Robert M. Taft, '38; Robert A. Muir, '41; Leonard H. White, '41.

THE CENTURY CLUB

William A. Jordan, '02; Alfred E. Rankin, '04; Edwin M. Roberts, '04; Harold B. Larned, '05; James E. Smith, '06; Percy M. Hall, '07; Fritz A. Hedberg, '07; Arthur J. Knight, '07; Percy C. Smith, '07; George A. Barratt, '09; Oliver B. Jacobs, '10; Daniel H. Reamy, '10; Edmund M. Flaherty, '11; G. Allan King, '11; Earl W. Gleason, '12; Fred G. Munson, '12; Wilfred L. Peel, '12; Frederick S. Carpenter, '13; George C. Graham, '13; David G. Howard, '13; Harry B. Lindsay, '13; J. Arthur Planteroth, '13; Leon H. Rice, '13; Donald M. Russell, '13; Roland H. Dufault, '14; Carl F. Fritch, '14; George Ross, '14; Henry C. Whitlock, '14; Frederick P. Church, '15; G. Noble Davidson, '15; Benjamin B. D'Ewart, '15; Everett Hutchins, '15; Raymond P. Lansing, '15; Edwin T. Warren, '15; Coburn L. Berry, '16; Carl H. Burgess, '16; Leslie J. Chaffee, '16; Roland D. Horne, '16; Harold W. Howarth, '16; Arthur Nutt, '16; Selden T. Williams, '16; Aurelio E. Zambarano, '16; Ronald E. Greene, '17; Herman Hollerith, Jr., '17; Andrew B. Holmstrom, '17; John M. Leggett, '17; Philip C. Pray, '17; Russell H. Smith, '17; John R. Whealer, '17; Levi E. Wheeler, '17; Edmond E. Moore, '1B; Oakley C. Walkar, '18; Howard S. Foster, '19; Thomas B. Rutherford, '19; Paul M. Abbott, '20; Arvid E. Anderson, '20; C. Harold Berg, '20; Herbert E. Brooks, '20; Milton W. Garland, '20; Raymond B. Heath, '20; Burton W. Marsh, '20; Carlton J. O'Neil, '20; Robert A. Peterson, Sr., '20; George L. White, '20; Frank K. Brown, '21; Philip K. Davis, '21; Cyril Israel, '21; William L. Martin, '21; Lyle J. Morse, '21; Paul S. Sessions, '21; Lincoln Thompson, '21; Harold B. Whitmore, '21; Charles I. Babcock, '22; Lawrence K. Hyde, '22; Lloyd F. McGlincy, '22; John V. Russell, '22; Edwin L. Sholz, '22; Edwin B. Coghlin, '23; Wallace C. Hathaway, '23; Percival E. Meyer, '23; Richard Walberg, '23; Edward G. Beardsley, '24; Thomas L. Counihan, '24; Roger A. Fuller, '24; Alfred K. Morgan, '24; John N. Styffe, '24; Donald B. Wilson, '24; David C. Bailey, '25; Charles H. Bidwell, '25; Raymond L. Copson, '25; Henry L. Mellen, '25; L. Ivan Underwood, '25; Richard S. Boutelle, '26; Philip R. Delphos, '26; Charles N. Healey, Jr., '26; Chandler W. Jones, '26; Howard G. Lasselle, '26; Donald F. Sears, '26; Victor E. Hill, '27; Nelson E. Parmelee, '27; Carleton R. Sanford, '27; Ralph V. Karlson, '28; Frederick H. Knight, '28; A. Everett Lawrence, '28; William A. Manty, '28; Alexander L. Naylor, '28; Frederick G. Sandstrom, '28; Lothar A. Sontag, '29; C. Eugene Center, '30; Charles H. Cole, '30; John W. Conley, '30; Clifford B. Ives, '30; Paul B. Morgan, Jr., '30; Daniel F. O'Grady, '30; Fred P. Peters, '30; M. Lawrence Price, '30; Warren C. Whittum, '30; Albert M. Demont, '31; Oliver B. Merrill, '31; Eben H. Rice, '31; Trueman L. Sanderson, '31; Herbert A. Stewart, '31; Oliver R. Underhill, Jr., '31; Robert S. Williamson, '31; William W. Asp, '32; Clement R. Barlow, '32; Dana B. Carleton, '32; Donald J. McGee, '32; Henry B. Pratt, Jr., '32; William F. Reardon, '32; Leon D. Skuropat, '32; Sidney Thune, '32; Waldo E. Bass, '33; Robert E. Ferguson, '33; Harry T. Jensen, '33; Edwin L. Johnson, '33; John A. Birch, '34; Warren H. Davenport, '34; Dwight J. Dwinell, '34; Clayton E. Hunt, Jr., '34; Luther C. Leavitt, '34; Charles W. McElroy, '34; Howard E. Stockwall, '34; Edward J. Abendschein, '35; Raymond J. Quenneville, '35; M. Kent Smith, '35; William R. Steur, '35; Plummer Wiley, '35; Carleton W. Bordan, '36; Harold F. Henrickson, '36; John J. O'Donnell, '36; Stadman W. Smith, '36; Arthur D. Tripp, Jr., '36; Robart C. Wright, '36; Erving Arundale, '37; Philip G. Atwood, '37; Martin G. Caine, '37; Gordon F. Crowther, '37; Morton S. Fine, '37; Charles R. Michal, '37; Richard J. Donovan, '38; Richard M. Elliott, '38; Thomas B. Graham, '38; Raymond J. Perreault, '38; Walter L. Abel, '39; Jack F. Boyd, '39; Wilder R. Carson, '39; William L. Kay, '39; Robert W. Martin, '39; George E. Monchamp, Jr., '39; Billie A. Schmidt, '39; Frans E. Strandberg, '39; Fred N. Webster, '39; Donald R. Batas, '40; William S. Brooks, '40; Malcolm S. Burton, '40; Raymond J. Forkey, '40; Howard G. Freaman, '40; Joseph M.

Halloran, Jr., '40; Russell A. Lovell, Jr., '40; Lawrence C. Neale, '40; S. Merrill Skeist, '40; Stanley M. Terry, '40; Donald T. Atkinson, '41; George A. Cowan, '41; Joseph P. Jurga, '41; Donald F. Palmer, Jr., '41; William C. Richardson, '41; Roy F. Bourgault, '42; Philip J. Hastings, '42; Howard C. Warren, '42; Raymond Wynkoop, '42; Clifton B. Kinne, '43; Herbert Asher, '44; George W. Collins, '44; Nicholas N. Economou, '44; Harrison E. Holbrook, Jr., '44; David M. Field, '44; Fred S. Moulton, '44; Joseph D. Carrabino, '45; Robert M. Edgerly, '45; Anson C. Fyler, '45; Howard D. Gerring, '45; Philip A. Henning, '45; William C. Howard, Jr., '45; Robert E. Scott, '45; George E. Comstock, '46; Edward A. Pendleton, '46; Peter B. Myers, '46B; Allan Glazer, '47; Albert S. Goldberg, '48; Clark L. Poland, '48; Peter J. Dalton, Jr., '49; James M. Genser, '49; Edward A. Luiz, '49; Alfred Strogoff, '49; Burl S. Watson, Jr., '49; John H. Williams, '49; Arthur O. Bouvier, Jr., '50; John P. Burgarella, '50; Robert F. Stewart, '50; Russell W. Waldo, '50; G. Albert Anderson, '51; Martin G. Bromberg, '51; Robert N. Cochran, '51; Frank A. MacPherson, '51; John Marley, '51; Owen Ott, '51; John M. Tracy, '52; Orren B. McKnight, Jr., '53; Anthony J. Ruksnaitis, '53; Richard D. Kirk, '54; Douglas B. MacLaren, '54; Harry L. Mirick, Jr., '54; Walter A. Reibling, '54; Edwin Shivell, Jr., '54; Robert L. Chang, '55; Louis Gaumond, '55; Harold S. Sauer, '55; Edwin B. Coghlin, Jr., '56; John W. Braley, Jr., '57; Edward J. Moineau, '57; Philip M. French, '58; Roger A. Jolicoeur, '58: Marian C. Knight, '58: Peter J. Zanini, Jr., '58: John L. Wheeler, '59; William M. Aitken, '60; Dwight M. Cornell, '60; Benjamin B. Morgan, '60; Arthur W. Kroll, '61; Robert E. Seamon, '61; Nicholas Cotsidas, '62; Keyren H. Cotter, Jr., '62; Joseph V. Bucciaglia, '63; Arthur E. Goddard, '63; Robert H. Gowdy, '63; Maurice R. Silvestris, '64; Stanley Szymanski, '64; Ronald G. Greene, '65; Richard B. Nelson, '66; Peter G. Stebbins, '66; Edward J. Ciarpella, '67; Thomas Y. Liu, '67; Charles F. Monnier, '27.

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Class	Contril		ar- ation Amount	Class	ontrib-	% P	A	Class	Contrib-	% P	
0.000	utors	истр	ation	2,330	utors	ticipa	tion		utors	ticipa	ition
1878-1901	9	34	\$462.00	1927	39	44	1,447.00	1949	95	39	2,680.00
1902-1903	8	38	225.00	1928	59	45	2,152.00	1950	72	34	1,856.00
1904	4	50	280.00	1929	50	53	2,595.00	1951	74	38	3,490.00
1905	3	33	130.00	1930	50	42	2,778.88	1952	54	31	1,320.00
1906	4	29	180.00	1931	50 -	42	1,994.57	1953	55	31	1,389.00
1907	13	52	635.00	1932	48	42	2,982.93	1954	45	31	1,408.00
1908	12	48	255.00	1933	58	46	3,258.00	1955	40	30	1,078.00
1909	10	42	320.00	1934	58	49	2,002.00	1956	44	29	920.00
1910	13	41	583.00	1935	57	43	2,416.00	1957	61	29	1,666.00
1911	10	37	887.25	1936	40	36	1,625.00	1958	60	28	1,650.75
1912	21	45	1,116.00	1937	46	40	2,193.49	1959	62	24	1,287.00
1913	23	49	1,735.00	1938	61	45	2,755.06	1960	73	33	1,646.00
1914	25	51	1,755.00	1939	58	42	2,410.00	1961	71	25	1,659.75
1915	30	73	2,715.63	1940	63	40	2,139.00	1962	52	21	891.00
1916	30	41	1,811.00	1941	57	37	3,239.00	1963	59	24	1,307.00
1917	39	50	1,990.00	1942	66	41	1,824.75	1964	43	15	878.00
1918	19	37	560.00	1943	60	43	1,175.00	1965	48	16	866.00
1919	33	79	8,504.80	1944	74	47	3,965.00	1966	39	13	803.00
1920	35	48	2,637.75	1945	54	52	2,716.00	1967	43	13	633.00
1921	32	49	1,415.00	1946	33	26	1,100.00	1968	44	12	684.00
1922	44	50	2,445.00	1946B	24	22	637.00	Hon.& Otl	ners 21		4,602.00
1923	34	48	1,240.00	1946C	1	8	25.00	Totals	2,928		\$119,822.61
1924	32	43	1,727.00	1946D	17	30	445.00				· ·
1925	25	33	1,368.00	1947	24	32	587.00	Matching (Gifts		14,547.82
1926	53	43	2,055.00	1948	65	36	1,613.00	Grand Tot	al		\$134,370.43

		1	DISTRICT	TOTALS—Jur	ne 30, 1969				
						1968	- 69	1967	- 68
			No. in	No. of	Amount	% Partici-	Average	% Partici-	Averag
District			District	Gifts	Received	pation	Gift	pation	Gift
Berkshire	 		67	22	\$ 630.00	33	\$28.50	35	\$29.20
Boston	 		770	269	10,924.00	35	40.60	38	34.84
Central New York	 		102	37	1,180.00	36	31.90	28	35.68
Chicago	 		108	29	1,115.00	27	38.40	30	65.39
Cincinnati	 		44	14	380.00	32	27.00	26	21.6
Cleveland	 		97	47	1,601.75	49	34.25	42	46.5
Connecticut Valley	 		323	105	4,391.25	33	41.70	26	38.8
Detroit	 		86	31	1,110.00	36	36.00	41	37.7
Hartford	 		578	218	8,346.00	38	38.00	41	31.3
Hudson-Mohawk	 		120	35	1,846.07	29	53.00	37	23.0
Los Angeles	 		231	68	2,716.00	29	40.00	28	40.0
New Haven	 		378	130	4,622.00	35	35.50	28	37.9
New York	 		528	171	8,363.06	32	49.00	27	47.3
North Shore	 		270	82	2,702.25	30	33.00	27	34.5
Northern California	 		138	55	2,315.75	40	42.20	39	34.7
Northern New Jersey	 		447	202	7,475.49	46	36.70	43	39.5
Pacific Northwest	 		30	9	552.50	30	61.80	19	55.0
Philadelphia	 		367	154	5,793.00	42	37.50	31	39.3
Pittsburgh	 		96	61	3,267.93	63	53.45	61	45.6
Rhode Island	 		239	135	2,831.00	57	20.90	36	24.2
Rochester-Genesee	 		84	36	1,170.00	43	32.50	47	32.3
Southeastern	 		111	38	1,181.50	34	31.30	31	33.2
Washington	 		261	116	4,728.00	45	40.70	31	33.5
Western New York	 		77	26	910.00	34	35.00	26	24.2
Worcester	 		1,324	429	17,927.43	32	41.90	27	39.1
Out of District	 		1,813	386	17,120.63	21	44.30	20	49.6
Others	 			23	4,622.00				
TOTALS			8,689	2,928	\$119,822.61	34%	40.58	31%	41.4

UNDERGRADUATE VIEWPOINT

by GLENN WHITE, '71, Feature Editor, The Tech News

An engineering college has often struck me as having a split personality. It teaches science and engineering, which are basically innovative and constantly seeking a better way to do something or produce a better product. But the engineering college itself seems resistant to change and afraid of innovation, in the face of growing signs that engineering education is simply not working. The old saying "Those who can, do; those who can't, teach," comes into mind, and one reflects that perhaps that could be the trouble. The engineering college may be run and taught by engineers who can't innovate (and therefore are failures as engineers), who can't look at a new idea objectively and judge it on its merits without dismissing it because it is different.

I don't really believe the above, but, with the publishing of "The Future of Two Towers - Part III: A Model," Tech is now in a position where the above hypothesis will be tested and where we find out if this college community can look objectively at a vastly different educational system and analyze it; not on the basis of what has been, but on the basis of what could be. The model suggested by the Faculty Planning Committee deserves neither our blind rejection nor blind acceptance, but rather careful deliberation by the entire Tech community on whether it is the best plan and, if so, how best to implement it.

The plan appealed to me, although I have some reservations to parts of it (for example, how could a person majoring in theoretical mathematics do advanced - level project work of the humanistic-technological type?). Overall, though, the plan impresses me, mainly because it confronts so many of the problems in society today.

The Planning Committee's model would deal with the present feeling in so many engineering students that their courses aren't relevant to their future as engineers. Under the proposed system, the student selects his own courses and at the same time does project work. The project work would give him an idea of what he needs to know in his particular field and he takes what to him are relevant courses, that he now knows he needs.

The "humane technologist" is becoming more and more necessary every day. Since the 19th century, the technologist had flourished in this country and has produced an affluent society unimaginable a hundred years ago. Unfortunately, the affluent society is not satisfying many people. The growth of technology has produced a society where one feels like an IBM card, where pollution and violence is making the Great Society the Ugly Society, and where starvation exists not far from low-cholesterol diets. The age of Science is ending, the age when one could trust blindly in Science for the salvation of the human race. A new age is dawning, in which men realize that science and technology is only a tool, that technology is neither good nor bad in itself, that only man is, and that man will have to direct technology (and not simply let it grow like Topsy) to produce not only affluence and more affluence for the majority, but a superior way-of-life (not necessarily wealthier) for all.

To do this, mankind will have to re-

late science and the humanities. Unfortunately, liberal arts students and graduates seem to be in a revolt against science, in which they want nothing to do with technology. The science and engineering student must then be the one to cross over and become familiar with the relationship between science and society. And what better way to make them familiar with that relationship than to confront them with actual situations involving this, as the report so well pointed out.

The abolishment of the academic departments may well lead to a fundamental change in scientists and engineers. No longer would a person be a physicist or a chemical engineer. Rather, he would be a scientist or engineer studying optics or an engineer studying chemical processes. The old lines of academic disciplines, which divided scientists and engineers into almost arbitrary classifications and narrow fields of interests and which are already being increasingly crossed, would be abolished.

A sense of boldness impresses me as I think of what the model could result in. We will be venturing, if we accept the model, into an educational system that is unique, into, actually, the unknown. There is danger involved, of course. Perhaps we cannot attract the money to maintain the program. Perhaps the graduates of American high schools will not be able to adjust to the proposed unstructured curriculum. But what is the alternative? Can we continue as we are now, safe for the moment in our structured framework, which no one likes?

I remember one evening this summer watching men walk on the moon, men there because a man had the boldness to say, "I believe this nation should permit itself to achieve the goal, before the decade is out, of landing a man on the moon and returning him safely to earth," because scientists and engineers and a nation (actually two) had the boldness to venture into the unknown. It is time that we applied the same boldness to technical education and to the problems of society.

IN

MEMORY

Leo S. Jansson, Trainer and Equipment Man

To many alumni, Leo Jansson was just another name on the football program at Homecoming, but to the Tech athletes and students who have graduated since 1959, his name means much more. It is these people who know how deeply Leo felt about Worcester Tech and, above all, "his" athletes.

80b Pritchard, head of the Athletic Dept., described him best when he said, "Leo was a unique individual; he never thought first of himself but always, and I mean always, of the other person. He spent untold and unheralded hours in helping a boy get back into shape. He went far beyond the call of duty in working with Tech athletes.

"He had a unique personality; he was never harsh or unfair, and always wore a smile. He was a very effective trainer because of this, and I'm sure that hundreds of Tech athletes can recall helpful kind acts that Leo had performed for them. His loss is immeasurable."

Leo was born in West Sutton, Mass. and served for 20 years in the Navy. During his Navy career, he was stationed at the Worcester Reserve Training Center several times. During World War II he was with the First Marine Division and participated in numerous landings, receiving five battle stars. Leo served as a pharmacist's mate and joined Tech four days after he completed his Navy career in 1959. Since then he had been healing, both physically and mentally, his Tech



Leo S. Jansson 1921-1969

athletes.

He was a member of the Quinsigamond Lodge of Masons and was a 32nd degree Mason. He was also an honorary member of the Alumni Association.

He leaves his sister, Mrs. Ruth Hatfield; two brothers, Henry R. and Arthur J.; and several nieces and nephews.

The Tech athlete has lost a good friend, and his friendship will be deeply missed. Perhaps the largest void will be the absence of the familiar voice in the training room: "Hi ya, kid, how's it goin'?"

Marlboro, Mass.; where he attended Marlboro High School. While at Tech he was a member of the Society of Automobile Engineers.

After leaving Tech he taught at vocational schools in Connecticut and Berlin, Mass.

He was past president of the Wollaston Golden Age group, former vice commodore of the Squantum Yacht Club, and a member of the Hanover Grange and Senior Citizens. In the early 1900's he built automobiles. One of his cars, which was called the Wheeler Runabout, is now in the antique auto museum in Athol, Mass.

Husband of the late Florence B. (Allen) Wheeler, he is survived by a daughter, Mrs. Louise B. Morse; a sister, Miss Eva 8. Wheeler; two grandchildren; and four great-grandchildren.

George Daniel Goodspeed,'03

George Daniel Goodspeed, '03, of Holiday Point Rd., Sherman, Conn., died on December 20, 1968.

He was born February 3, 1880, at Gardner, Mass. and attended Gardner High School. When he left Tech he became a designer for Bullard Machine & Tool Co., Bridgeport, Conn. He left there to take a position as plant engineer at Heywood Wakefield Co., Gardner, Mass. In 1935, he took a position with the Mahoney Chair Co. as a mechanical enginee until his retirement in 1955.

In 1912 he married the former Bernice E. Lucas. They had one daughter, Barbara.

Albert Willis Darling, '04

Albert Willis Darling, '04, of Street Rd., Kennett Sq., Pa., died on May 21, 1969. Born on September 7, 1881, in Worcester, he attended Worcester English High School. While at Tech earning his degree in Mechanical Engineering, he was a member of Sigma Alpha Epsilon Fraternity.

Upon graduation he became a mechanical engineer for Graton & Knight Mfg. Co. In 1926 he took a similar position with Norton Co. until he was employed in 1932 by Reed Rolled Thread Die Co. He became plant engineer and director there until his retirement in 1953.

Husband of the late Marjorie (Elder) Darling, he is survived by a son, A. Bennett; a sister, Mrs. Robert C. Benchley; a brother, Syrus; two grandchildren and two greatgrandchildren.

Alfred Ernest Rankin, '04

Alfred Ernest Rankin, '04, of 18 Norton St., Worcester, Mass., died August 21, 1969, at Hahnemann Hospital, Worcester.

Born December 31, 1883, in Worcester, he attended Worcester public schools until his entrance to Tech in 1900. While at Tech he studied mechanical engineering and was a member of Phi Gamma Delta Fraternity.

Albert Leslie Bliss '02

Albert Leslie Bliss, '02, of 30 Crofut St., Pittsfield, Mass., died at his home on May 15, 1969 at the age of 88.

Born in W. Brookfield, he attended Worcester English High School and studied electrical engineering while at Tech.

Upon graduation, he taught at Pratt Institute of Brooklyn briefly, and in 1916 moved to Pittsfield to work for General Electric. He retired in 1944.

He was long active in community affairs. In 1948, Mr. Bliss was given Scouting's highest honor, the Silver Beaver award. At that time he was called "one of the most valuable" men in the Scouting movement. He formerly served on the Berkshire County Boy Scout Council 80ard.

In 1949, Mr. Bliss became the first Berkshire County member of the Society for Prevention of Cruelty to Children to serve on the state board. In 1964, he was presented with the John B. Whiteman award in recognition of his "outstanding service" to the society. In his 25 years of service he had held all but one major office and had served on many committees.

Mr. Bliss was active in the Community Fund and was chairman of its budget committee. He also served as a director.

He leaves two daughters, Miss Elizabeth B. Bliss and Mrs. Frederick H. Merrill; and four grandchildren.

Ernest O. Wheeler '02

Ernest O. Wheeler, '02, died December 6, 1968, at Jordan Hospital, Plymouth, Mass. He resided at 14 Old Bridge Rd., Hanover, Mass.

He was born October 17, 1878, in

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After his graduation, he joined the U.S. Envelope Co. of Worcester. From 1906 to 1914 he worked at several jobs in the New York area before returning to U.S. Envelope. From 1914 to his retirement in 1949, he was the director of engineering.

He was a former member of the Worcester Common Council, a former Worcester Public Library trustee, a former director of the Worcester Chamber of Commerce, and former president and formerly director and treasurer of the Worcester YMCA, a trustee and honorary trustee of Peoples Savings Bank, past president of Worcester Kiwanis Club, Worcester Community Council, and Southern Worcester County Health Association

He was also a member of Worcester Country Club, the University Club, the Bohemians, Worcester Economic Club, Worcester County Republican Club, Worcester County Mechanics Association, Appalachian Mountain Club, and the Newcomen Club. He was elected a 33rd degree Mason in 1948.

He leaves a sister, Miss Ethel M. Rankin, with whom he made his home; a niece, Miss Alice C. Rankin; three nephews, John R. Rice, Benjamin B. Rice, and Alfred W. Rice. His brother, William J.A. Rankin, '00, died in 1942

Ralph Parker Norton, '12

Ralph Parker Norton, '12, of 9 Oakland St., Manchester, Conn., died July 30, 1969, at a Manchester convalescent home.

He was born August 23, 1BBB in Manchester. He attended Worcester (Mass.) Academy prior to his entrance to W.P.I. While at Tech he majored in electrical engineering. He also received an advanced degree in 1919 from Tech in the same field. He was a member of Sigma Alpha Epsilon Fraternity.

Since 1931 he was affiliated with the Norton Electrical Instrument Co., where he served as secretary-treasurer until 1954, when he became its president.

He was a member of Manchester Lodge of Masons, and in June of 1963 received his 50-year membership pin from the Lodge. He was a York Rite Mason and a member of the Sphinx Temple Shrine in Hartford, (Conn.). He also was a 55-year member of King David Lodge of Odd Fellows.

Survivors include eight cousins.

John Axtell Canton, '13

John Axtell Canton, '13, of 43 E. Chestnut St., Sharon, Mass., died July 11, 1969, at Norwood (Mass.) Hospital.

He was born July 12, 1890 in Everett, Mass., and was educated at Chelsea (Mass.) High School. While at Tech he majored in civil engineering.

For 40 years he was with the M.B.T.A., retiring in 1955. He was a member and past Grand Knight of Belmont Council No. 332

K. of C., a member of the Catholic Alumni Sodality of Boston, and a member for over 50 years of the Holy Name Society.

He is survived by one son, John A. Canton, Jr.; and two grandchildren.

Nels Albin Nelson, '14

Dr. Nels Albin Nelson, '14, a nationally known leader in public health, and founder of the Nesserian Medical Society of Massachusetts, died August 24, 1969, in Crescent City, Fla.

A native of Fitchburg, Mass., he attended Fitchburg High School before his entrance to Tech. While at Tech he studied chemistry which led him, upon graduation, to a medical degree from Long Island College and a master's degree from Johns Hopkins School of Public Health.

He devoted his life to public health as director of the American Red Cross Tuberculosis Commission in Sicily, after which he joined the Massachusetts Dept. of Public Health. While in this capacity he was associated with the Harvard School of Public Health, Tufts University, and Simmons College. In 1942 he was appointed deputy state health officer in charge of venereal disease control in the Maryland Dept. of Health. During this period, he was a lecturer at Johns Hopkins Medical School.

He leaves three sisters, Miss Florence A., Mrs. Eric J. Anderson, and Mrs. Kenneth H. Wyatt.

Major Nathan Carlos Avery, '15

Major Nathan Carlos Avery, '15, died June B, 1969, in Long Beach, Calif. He resided at 233 Canada West, San Clemente, Calif.

Born February 7, IB93, in New Britain, Conn., he was educated at Westfield (Mass.) High School. After leaving Tech he received a Bachelor of Philosophy degree from Yale University. He had 20 years of service in the Navy and Army Reserve. He was surpervisor, of plant and maintenance at the Connecticut Veterans Home and the Southbury Training School.

He was a member of the American Legion, Rotary Club, and was a Mason. He is survived by his wife, the former Myrtle Cox; a daughter, Mrs. Harriet A. Day; a brother, Sherman F.; two sisters, Mrs. Arthur D. Bradley and Mrs. L. P. Forker, Sr.; three grandchildren and several nieces and nephews.

Clifton Perry Howard, '15

Clifton Perry Howard, '15, of 1147 Main St., Holden, Mass., died July 22, 1969.

He was born September 1B, 1B91 in Worcester, where he attended Worcester English. He studied mechanical engineering while at Tech. He was elected to Tau Beta Pi and also worked on the college yearbook.

He had retired in 1957 from the Rock-

wood Sprinkler Co. where he had been employed since his graduation from Tech. He was factory manager at the time of his retirement.

He was a former chairman of the Worcester Chapter of A.S.M.E. and a former director of the Worcester Economic Club and the Worcester Safety Council. He was a former president of the City Missionary Society, the Worcester Engineering Society, and the Worcester Kiwanis Club.

He leaves his widow, the former Juniata Burlingame; two daughters, Mrs. Richard S. Day and Mrs. Harry W. Burns; six grandchildren; and one great-grandchild.

Leonard Maynard Krull, '16

Leonard Maynard Krull, '16, of Vinal Hill Rd. in Westboro, Mass., died July 14, 1969.

Born in Molkwerum, Netherlands, he moved to the United States at the age of five. After two years of high school, he attended Mt. Hermon School for two years before coming to Tech. While at Tech Mr. Krull was a member of the Glee Club. He received his B.S. in mechanical engineering.

After his graduation, he went to work for Norton Co. in Worcester. While in Norton's employ, he spent two years in French, British, and Dutch Guinea in search of bauxite.

In November of 1922, with two associates, he founded the Bay State Abrasive Products Co., which later became Avco Bay State. As the success of the firm grew, Bay State Abrasives became one of the largest industries in its field in the United States. Mr. Krull became Chairman of the Board in 1949 and Honorary Chairman in 1958.

In 1951, Mr. Krull was elected to the Board of Trustees at Tech and was elected to life membership in 1956. In 1967, he was honored by his Alma Mater when he received an honorary doctor of engineering degree.

Mr. Krull had served as vice-president and director of the Westboro National Bank, trustee of the Westboro Savings Bank, and, for 17 years, a member of the town Finance Committee. He also served on the Westboro Appeals Board.

He leaves his wife, the former Pauline F. Fairbanks; three daughters, Mrs. Ida May Elby, Mrs. Cornelia Hutt, and Mrs. Lenice Hirschberger; two sisters, Mrs. Rintze Haringa and Mrs. Gert Youngsma; and eight grandchildren.

Lester Willis Kimball, '17

Lester Willis Kimball, '17, of 1B94 Palmas Dr., San Marino, Calif., died instantly of a massive coronary on June 6, 1969 while on vacation in the San Bernadino Mountains

Born March 14, 1892 in Lynn, Mass., he attended Saugus (Mass.) High School. After

two years at Worcester Tech, Lester transferred to the University of Maine where he majored in economics and sociology. He left the University for two years to serve in the Army Medical Corps during World War I and returned to graduate from Maine in 1919. While at Tech he was a member of Phi Sigma Kappa Fraternity. He was an honorary member of Phi Kappa Phi.

Since his graduation, he had been in the security business, first in New York City and later in Los Angeles.

He is survived by his wife, the former Kate G. Shoaff; a daughter, Mrs. Kate Harris; a son, Robert S.; a brother, Charles F.; a sister, Mrs. Esther Kohlhoff; and seven grandchildren.

Winchester DeVoe, Jr., '21

Winchester DeVoe, Jr., '21, of 203 Kingsley Ave., Mahoning Manor, Danville, Pa., died on November 25, 1968, in Hallandale, Fla. He had been staying at his winter home in Hollywood, Fla., at the time of his death.

He was born July 29, 1897, in Brooklyn, N.Y., where he attended Manual Training High School. Upon graduation from Tech as an electrical engineer, he worked for General Electric of Schenectady, N. Y. A year later he became the district manager of Pennsylvania Power and Light Co., Danville. Then, in 1930 he established his own insurance and real estate business in Danville.

Mr. DeVoe was active in many civic fraternal organizations. He was a member of Mahoning 516; F&AM; the Caldwell Consistory; the Danville Elks; Danville Moose; and the Friendship Fire Company. He was a veteran of World War 1 where he served in the U.S. Navy. He is past Commander of Danville American Legion Post 40. He was also a member of the Danville Board of Health.

He leaves his wife, the former Catherine M. Koons; two daughters, Mrs. Grant Summers and Mrs. Victor Schwab; one brother, Bryan R. Devoe; and three grandchildren.

Carleton Thomas Gilbert, '21

Carleton Thomas Gilbert, '21, of 32 Wildwood Gardens, Port Washington, N. Y., died May 8, 1968.

Born March 6, 1898, in Thomaston, Conn., he attended Worcester Academy before earning his degree in electrical engineering in 1921. While at Tech he was a member of Sigma Alpha Epsilon Fraternity and served on the Inter-fraternity Council.

Upon graduation, Mr. Gilbert joined the New York Telephone Co., where he remained until he retired in 1960. While employed there he served as supervisory and project engineer for the Hempstead (Long Island) branch of the company.

Among his survivors is his son, Carleton T., Jr.

Edwin Augustus Stewart, '27

Edwin Augustus Stewart, '27, of 588 Main St., Agawam, Mass., died June 5, 1969, at his home.

He was born November 15, 1905, in Worcester, where he attended Commerce High School. While-at Tech he earned a degree in electrical engineering. He was a member of Lambda Chi Alpha Fraternity, was on the basketball team, and was captain of the golf team.

Shortly after graduation he joined the General Fibre Box Co. in Springfield, Mass., where he remained and eventually became plant manager.

He is survived by his wife, the former Beatrice Stone; his mother, Mrs. Clara (Lagerstrom) Stewart; a son, Edward A.; and a sister, Mrs. Cyril McQueen.

Edwin Augustus Stewart, '27

Arthur Stanley Marshall, '29, of 797 Grafton St., Shrewsbury, Mass., died at Peter Bent Brigham Hospital, Boston, on March 5, 1969.

Born November 8, 1908, in Westboro, Mass. he was educated in local schools. While at Tech he was a member of Tau Epsilon Omega Fraternity, which was the original chapter of Sigma Phi Epsilon.

He worked for Savage Arms Corp. of Utica, N. Y., as foreman and product Engineer. In 1950 he joined Crompton and Knowles in Worcester as Superintendent of Maintenance. In 1958 he was made plant manager.

Julian Hopkins Ray, '34

Julian Hopkins Ray, '34, of 1700 Sherwood Rd., Silver Spring, Md., died Sunday, June 22, 1969, at the George Washington University Hospital after a brief illness.

Born in Framingham, Mass., on August 21, 1912, he was educated in the Framingham School System. He earned his Bachelor and Master of Science degrees at Tech in the field of electrical engineering. While at the school he was a member of Lambda Chi Alpha Fraternity.

He was a nationally known development engineer, and the founder, past president, and chairman of the Board of Directors of Washington Technological Associates Inc., a Rockville (Md.) based research and development company. Mr. Ray was also a director and member of the executive committee of Quanta Systems Corp., which he helped found in 1968.

After serving as a research and electrical transmission engineer at the American Steel and Wire Co., in Worcester between 1935

and 1942, he went to the Applied Physics Laboratory of the Johns Hopkins University in Silver Spring, Md.

At the Applied Physics Laboratory he had important roles in the accelerated development of the proximity fuze during World War II, and later participated in the development of advanced underwater guidance and control. His last assignments at APL were concerned with support and fire control systems for the TERRIER and TALOS guided missiles. In 1950 he left APL to found the Washington Technical Associates, Inc.

He has been an active member of the Science Industry Committee of the Washington Board of Trade, and of numerous other professional, technical, and management societies.

He is survived by his wife, the former Betty J. Gunst of Silver Spring, Md.

Leon James Volley, '34

Leon James Volley, '34, died February 7, 1969, in Union Memorial Hospital, Baltimore, after a long illness. He resided at 1311 Kitmore Rd., Baltimore, Md.

Born May 23, 1913, at Springfield, Mass., he was educated in St. Petersburg, Fla., before attending W.P.I. While at Tech he belonged to Lambda Chi Alpha Fraternity. After leaving Tech, he attended Strayer College of Accountancy, Washington, D.C., where he received his B.C.S. and M.C.S. degrees.

For several years after his graduation he did general accounting for several firms such as Western Electric Co., Inc., Consolidated Terminal Corp., and Colony House, Inc. The high point in his career came when, in 1945, the partnership of Koetting & Volley was formed. This was an accounting, auditing, and tax firm.

He is survived by his wife, Mary F. Volley; two children, a daughter, Mrs. Harriet W. Schuette, and a son, David C.; and two granddaughters.

Everett Leslie Vaughn, '35

Everett Leslie Vaughn, '35, of 22 Granite St., Uxbridge, Mass., died Saturday, May 31, 1969, in Rutland Heights Hospital. Born in Worcester on September 27, 1912, he was a graduate of Commerce High School. While at Tech he earned a degree in electrical engineering. He belonged to the A.S.M.E. and the A.I.E.E.

His first job was with Heald Machine Co. as a designer. He then moved and became N.E. district manager of Warner & Swasey Co., Cleveland. Finally he returned to Heald Machine Co. to become their eastern manager of dealer sales.

He was a member of Uxbridge Evangelical Congregational Church and served as its deacon for several years. He was a member and past patron of Orion Chapter, Order of Eastern Star, and a member of Solomon's Temple Lodge of Masons. He also served as secretary of Boy Scout Troop 22.

He leaves his widow, the former Ruth A. Bassett; a son, 2/Lt. Richard B., '68, stationed at Ft. Bliss, Tex.; two daughters, Mrs. Ruth L. Phillips and Mrs. Susan C. Donham; a sister, Mrs. Viola Cushman; four grandchildren; and two nieces.

Dixon Chapman Burdick, '36

Dixon Chapman Burdick, '36, of Washington, D.C., died on July 22, 1969, at Providence Hospital in Washington.

Born September 17, 1914, in Norwich, Conn., he attended Manchester (Conn.) High School prior to entering Tech. While at Tech he majored in chemistry. He was a member of the basketball team and Skeptical Chymists.

He was a research scientist at the Navy Research Bureau at Anacostia, Md. He was a veteran of World War II, and a captain in the Naval Reserve.

Surviving are two daughters and three sons; his wife, the former Mary E. King; a sister, Mrs. Phyllis B. Howenson; and a niece, Mrs. Richard Dziadus.

Benjamin Allen Lambert, '40

Benjamin Allen Lambert, '40, passed away in Pittsburgh's Western Pennsylvania Hospital on June 2, 1969. He resided at 101 Algonquin Rd., Pittsburgh.

He was born in Brockton, Mass., March 14, 1918. He earned a degree in chemical engineering at W.P.I. Ben was very active while at Tech. He earned letters in both football and baseball, was sports editor on the *Tech News* and served on the Interfraternity Council. He was a member of Sigma Alpha Epsilon Fraternity and was honored by election to The Skull.

He originally started work for E.I. duPont de Nemours and Co. and later for the Polaroid Corp. in Cambridge, Mass. He then moved to Arthur D. Little, Inc. of Cambridge where he was a senior engineer. He remained at this firm until 1965, when he was appointed director of market development and planning for Dravo Corp., Pittsburgh.

He leaves his wife, the former Constance Keene, and five sons: Benjamin A., Jonathan K., Christopher G., Alexander D., and Anthony B. He also leaves his mother, Mrs. Deborah (Doane) Lambert, and a brother, Stevens.

YOUR CLASS AND OTHERS

1917

Former Worcester City Councillor Andrew B. Holmstrom was awarded a citation for meritorious service at Quinsigamond Community College's fifth commencement. He served as chairman of the Community College Committee of the Worcester Area Chamber of Commerce which was instrumental in locating the college where it is today. . William L.G. Mackenzie writes, "Still working after 52 years with same company." He is President of Fiske-Carter Construction Co., Greenville, S.C.

1919

Rear Admiral James E. Arnold, (Ret.) has recently completed a book called Hardscrabble Hall. The book is published by Vantage Press, Inc. of New York who state, "Hardscrabble Hall is a delight to read if only for the story it tells." . . . Rear Admiral Richard S. Morse is now fully retired from the U.S. Navy.

1921

We have learned that *Edward Rose* has retired and is now living in Hallandale, Fla. He formerly was employed by Fred S. Dubin Assoc., W. Hartford, Conn., as Chief Sanitary Engineer.

1922

Kenneth J. Lloyd writes, "I retired from Turner Construction Co., Boston, Mass., on Feb. 1, 1969, after 47 years as construction engineer on general types of buildings."... Fred P. Millard has recently joined the Mogabgab Co., Real Estate and Insurance, in New Canaan, Conn.... George A. Walker writes, "I am now somewhat less 'retired' than I have been in the last three years. A consulting organization that prepares specifications for municipal water distribution and sewage disposal plants here in New Jersey has asked me to handle their electrical power specifications. Officially then I am now a Consulting Engineer in Electric Power . .."

1923

Edmond G. Reed has retired from the Factory Insurance Association in Springfield, Mass. He and his wife now live in E. Boothbay, Me.

1925

O. Arnold Hansen has retired from Bell Aerosystems Co. to become a Consultant in Cryogenic Engineering, a field in which he spent 33 years with the Linde Div. of Union Carbide Corp. . We received a note from Urban R. Lamay: "I retired on Feb. 1, 1969, after 43 plus years with the General Electric Co. . . Our retirement plans include visits to our sevan children and eighteen grandchildren..." . . . Leonard F. Sanborn is a Sr. Engineer for Fay, Spofford & Thorndike, Inc. and is presently at a project office in Worcestar.

1926

We have learned of the retirement of *Henry G. Mildrum*. He leaves The Hartford Insurance Group after a 43-year career. He had

been a Vice-President of the company since 1967. . . Mabbott ("Mab") B. Steele has retired after 41 years with Republic Steel Corp., Steel and Tubes Div. He was District Sales Manager for the New York-New England District, Steel and Tubes Div. He is now living in Centerville, Mass. . . Howard G. Lasselle has retired after 42 years of service with New England Electric System. He had served as Vice-Prasident and General Purchasing Agent of the New England Power Service Co. since 1958.

1927

We received a letter from Richard E. Bliven. He writes, "On December 1, 1968, I retired as Senior Engineer from the New Jersey Power and Light - Jersey Central Power and Light Co. I had been with the company for the past sixteen years." . . . Victor E. Hill has informed us that he retired from the Duquesne Light Co. in Pittsburgh on May 1, 1969 after almost 42 years of service.

1928

Arthur T. Simmonds has retired from the New England Power Co. after nearly 42 years of service. He was tha Director of Hydro Production bafore his retirement on May 1, 1969.

1929

Allerton R. Cushman has retired from tha New England Power Co. whera ha was a Senior Engineer. He and his wife now liva in Sedona, Ariz.

1930

C. Eugene Center was Chairman of the Program Arrangaments Committee in planning for the 1969 Annual Meeting of the Amarican Association of Cost Engineers held in Pittsburgh, June 29 - July 2, 1969. There were 48 technical papers presented in 4 symposia. . . Our sincere sympathy to Her-

bert W. Davis whose wife, Gladys, died suddenly April 23, 1969. His son, Gary, is an instructor at St. Albans School, National Cathedral, Washington, D.C. Herb was elected President of the Industrial Equipment Manufacturers Council, a National Trade Association, at the annual meeting held in Anaheim, Calif. He is Vice-President, Research, at Triumph Machinery Co., Hackettstown, N.J. . M. Lawrence Price, Vice-President and Dean of Faculty at Tech, was recently honored by the ROTC cadet brigade. He was named an honorary cadet colonel in recognition of his leadership of the college since his undergraduate years.

1931

Edward J. Bayon took part in the main program of the spring meeting of the Holyoke (Mass.) Hospital Aid Assn. The topic of the program was "To Save a River." Mr. Bayon, who is presently a director of the New England Water Pollution Assn., discussed what was being done locally to prevent and correct pollution of the Connecticut River.

1932

John W. Greene has been named Vice-President of Public Relations for the Sturbridge (Mass.) Fairgrounds recreational development. He will assume his new position along with his present position as executive director of the Central Massachusetts Chapter of the National Safety Council. . . CF&I Steel Corp. has named Timothy D. Crimmins to the post of Chief Plant Engineer at their Roebling (N.J.) Plant. He previously held the position of Staff Engineer.

1933

Edwin L. Johnson has been elected Vice-President-Engineering and Operating of The Connecticut Light and Power Co. . Arthur E. Smith, who recently received an Honorary Doctor of Engineering Degree from WPI, has been elected a Term Trustee of Rensselaer Polytechnic Institute. He is President and Chief Administrative Officer of United Aircraft Corp.

1935

Raymond L. Moeller retired March 1, 1969 after 34 years of service with General Electric Co. He began with G.E. upon graduation and spent most of his career with them at their W. Lynn (Mass.) Plant. He was Manager of Professional Employee Relations at the time of his retirement. . . William E. Parker, Jr. has retired as Chairman of the Science Dept. of Wethersfield (Conn.) High School. He also served on the Board of Education in Wethersfield.

1938

It has been announced that Richard J. Donovan will chair the Water and Sewer Board of Winchester, Mass. He is president of R.J. Donovan, Inc. in Winchester. . . Capt.

George B. Cattermole has retired from the U.S. Navy and is now self-employed. He and his family live in Hamburg, Pa. . . John G. Despo is now Manager of Construction for the Chicago District of The U.S. Steel Corp.

1939

Walter L. Abel was elected Vice-President of United Shoe Machinery Corp. in Beverly, Mass. He had previously been in charge of research. . Leo G. Rourke, Jr. has moved to Martin Marietta in Orlando, Fla., where he is an Advanced Systems Engineer, Senior. . . Roland N. Anderson is a Project Engineer for the U.S. Army Tank Automotive Command in Warren, Mich. . John W. Hughes is now on the staff of the Oceanography Dept. at the University of California at Berkeley.

1940

Howard G. Freeman has received the "Heart of the Commonwealth Award" from the Society for Advancement of Management at their third annual banquet. President of the Jamesbury Corp. of Worcester, he received the award in recognition of his being "an outstanding business management executive." . . . Benedict K. Kaveckas writes, "I am employed as Chief Mechanical Design Engineer at a recently formed company, Information Transfer Corp., located in Wellesley Hills, Mass. . . " . . . Philip E. Meany has been elected a Director of The Heald Machine Co. in Worcester. He is also serving as Vice-President and Manager of the Bore-Matic Div. . . Lt. Col. Willard R. Terry, Jr. (USAF, Ret.) is an Asst. Prof. of Law at Ferris State College in Big Rapids, Mich.

1941

Charles L. Hoebel is now Manager of Marketing Research with Elliott Co., a Division of Carrier Corp., in Jeannette, Pa. . . It has been announced that Stephen Hopkins has been named Director of Engineering Research and Evaluation at Texaco Research Center, Beacon, N.Y. He was formerly Supervisor of the Combustion Section.

1942

John Ford, Jr. is a Project Superintendent for Peter Kiewit Sons Co. in Richmond, Calif. He and his family live in Corona del Mar. . . William H. Moulton has joined the Phalo Corp. of Worcester as Production Control Manager. He was previously employed by U.S. Steel Corp.

1943

Born: To Mr. and Mrs. H. Henry Ferris, Jr., a son, Jeffere Harold, on January 13, 1969. The Ferris' live in La Jolla, Calif.

Nelson M. Calkins, Jr. has been elected President of the Central Massachusetts Chapter of the Massachusetts Society of Professional Engineers. He is presently employed as a Senior Engineer at Norton Co. of Worcester.

In Bridgeport, Conn., Theodore H. Meyer is Manager of Quality Control for General Electric's Accessory Equipment Dept. He and his wife live in Easton, Conn... E.I. du-Pont deNemours & Co., Inc. employs James S. Proctor at their Jackson Lab in Wilmington, Del., as a chemist ... Jose L. Zaragoza is now a Quality & Reliability Assurance Engineer for the U.S. Navy Dept. of Defense, in Charlestown, Mass... Mobil Oil Corp. has named Behrends Messer, Jr. Manager of Marketing Engineering in their New York City Engineering Dept.

1944

Texaco has announced the appointment of Everett M. Johnson as Planning Director (Engineering) in the Scientific Planning Section of the Managerial Div. at Texaco Research Center, Beacon, N.Y... Jesse R. Watt is a Research Engineer for the National Highway Safety Bureau. He and his family live in Long Beach, Calif.

1945

Harold D. Fleit is President of Climatrol Industries, Inc., a subsidiary of Worthington Corp. He is also a member of the board of directors of Worthington Air Coils Ltd., Ontario, Canada, and the Air Conditioning and Refrigeration Institute. . . Robert A. Stengard is on a special assignment concerning urethanes for CPC International at Moffett Technical Center, Argo, III. . . George V. Uihlein, Jr. is now Dean of Men at Loyola College in Montreal, Canada.

1946

Roger H. Brown is a Senior Engineer for FMA Inc., Div. of Cutler—Hammer, Inc., in Los Angeles, Calif. . . Richard H. Merritt, Senior Product Engineer and Manager, abrasive engineering at Avco Bay State Abrasives Div., was chairman of two abrasive machining sessions at the American Society of Tool and Manufacturing Engineering Conference held at the Tool Exposition in Chicago.

1946B

John P. McCoy is a salesman for the firm of Hopper, Soliday, Brooke, Sheridan, Inc. in Philadelphia, Pa. . . Dr. Edward R. Funk, Professor at Ohio State University, was the main speaker at Tech's Honors Banquet for dean's list students. He addressed the students about a "balance" he said is necessary for "healthy nonconformity." . . . Paul F. Gorman has been appointed Vice-President and Project Manager of Jackson & Moreland, a Div. of United Engineers & Constructors Inc., Boston, Mass. He had previously headed the Jackson & Moreland power department. . . Robert E. Willis is now with General Electric Co. as a Sales Engineer in St. Louis, Mo. . . Theodore A. Balaska is now Director of Engineering & New Product Development for the Bishop Manufacturing Corp. in Cedar Grove, N.J. . . Paul R. Mullaney is a Project Engineer for Revere Copper & Brass in Scottsboro, Ala.

1946C

Philip G. Duffy is a Marketing Manager for Fairbanks Morse, Weighing Systems Div., in St. Johnsubry, Vt.

1946D

Leslie Flood has become Vice-President of Hutton Publishing Inc. of Manhasset, N.Y. He and his family live in No. Kingston, R.I.

1947

Robert Fletcher is an Electronic Engineer for The Federal Aviation Administration, D.O.T., in Washington, D.C. . . The Boeing Co. employs Robert S. Y. Yoseph as an Engineering Manager in Seattle, Wash. . . Two members of the class have received Master of Science degrees: Wilfred L. DeRocher, Jr. from the University of Colorado in Applied Mathematics and Vincent A. Zike from Rensselaer Polytechnic Institute.

1049

Thomas D. Hess writes, "In July, 1968 I was promoted to Director of Engineering, Fuel Injection Equipment. My former title was Chief Engineer, applications. In this new position, the responsibilities cover the design, development and customer application of all fuel injection products of Standard Screw

Co., Hartford Div."... Edmund J. Salate is Supervisory General Engineer for N.A.S.A. Electronic Research Center, Cambridge, Mass

1949

Raymond A. Brandoli has been elected Chairman of the Western Massachusetts Chapter of American Society for Quality Control. He is Manager of Quality Assistance at Studebaker Worthington Inc., Construction Equipment Div., in Holyoke, Mass. . . . Lawrence C. Brautigam is now Vice-President of Diversified Packaging Inc., Kensington, Conn. . . The new Manager-Product Development at Modern Machines Co. in Portland, Ore., is Robert M. Jodrey. . . Daniel L. McQuillan is the new Senior Vice-President of the Aerovox Corp. He will be in charge of their New Bedford (Mass.), Moncks Corner (N.C.), and Hamilton (Ont.) plants... Dr. Sidney Baldwin is a Professor of Political Science at California State College in Fullerton. His latest book, Poverty and Politics, has been universally acclaimed by the professional journals in economics, history, sociology, and political science . . . Gordon S. Brandes has moved from Syracuse, N.Y., to become Sales Supervisor for the Northern New England territory for Norton Co.'s grinding wheel sales force. He and his family will live in Topsfield, Mass. . . Robert E.

Miller, Jr. is Division Manager for Connecticut Light & Power . . . Arthur H. Dinsmoor is District Supervisor for Marshall R. Young Oil Co. in Midland, Texas . . . Donald Taylor has resigned as President of George F. Meyer Manufacturing Div. of "Automatic" Sprinkler Corp. of America and has accepted the position of Executive Vice - President of Nordberg Manufacturing Co. in Milwaukee, Wis.

1950

David G. Humphrey is now a Sales Engineer for the Sprague Meter Co., Div. of Textron, Bridgeport, Conn. . . Charles D. Seaver is an Architectural Mechanical Engineer for the University of Illinois in the office of the Campus Architect . . . Alexander T. Cyganiewicz is Chief Estimator for S.J. Curry & Co., Inc. in Albany, Ga.

1951

Newly elected Vice-President of Diesel Construction, Div. of Carl A. Morse, Inc., Donald A. Knowlton, will be in charge of the company's Boston operations . . . John B. Seguin is the District Sales Supervisor for Norton Co. in Philadelphia, Pa. . . Theodore A. Mellor should be proud of his son Theodore, Jr., who with another youth helped prevent a Worcester girl from being assaulted. Police commended Mellor and Dunbar



ENGINEERING INGENUITY

key to industrial progress

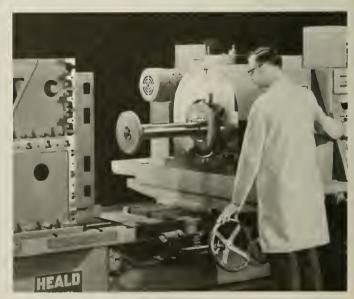
Design a machine that grinds the "nonrotatables" . . . seem impossible? Not when Heald engineering ingenuity is used. The new Planetary Model 5650 precision grinds parts that are too big, too heavy, and too awkward to rotate.

Instead of rotating the workpiece, it rotates the wheelhead in orbit around the centerline of the surface to be ground. And the wheel feeds into the work simply by changing the orbital radius.

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THE HEALD MACHINE COMPANY

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(the other youth) for "getting involved to help this girl."

1952

John W. Diachenko is a Senior Sales Engineer for the Torin Corp. in Torrington, Conn. He and his family now live in Simsbury, Conn. . . Raytheon has named Donald M. Krauss Manager of Product Development for the Ocean Systems and Equipment Dept. at their Submarine Signal Div. in Portsmouth, R.I. He and his family live in Bristol, R.I. . . William T. Mehalick is Area Supervisor for E.I. duPont deNemours & Co., Inc. in Circleville, Ohio.

1953

Married: Lucian H. Millard to Miss Theresa Vera Bryce of Erie, Pa., on May 24, 1969. Lucian is employed by General Electric Co. in Erie, Pa.

Born: To Mr. and Mrs. Stephen J. Abrams, a daughter, Sharon Lynn, in May, 1969. He is at Riverside Research Institute in New York, N.Y. . . Alfred C. Bafaro is President of Albro Construction & Engineering Corp. of Framingham, Mass. . . We received a note from John E. Flynn: "My wife, Mary, and I are enjoying our Monsanto International assignment immensely (plant manager of Monsanto's Oakville operation near Toronto, Ont.) Now have two children . . . " . . . Joseph A. Holmes has been appointed Chief Chemist of the Color Picture Tube Div. of Admiral Corp. He has been with Admiral since 1964. . . Texas Gulf Sulphur Co. of Aurora, N.C. employs Edward Markarian as a Maintenance Engineer-Mine. . . Over the summer, Dr. Herbert Slotnick (M.S.) taught a course to assist greater Hartford industrial chemists called "Colloids and Surface Chemistry." Dr. Slotnick is an Assoc, Prof. of Chemistry at Central Connecticut State College. . . Mobil Research and Development Corp. has announced the appointment of Paul W. Snyder, Jr. as Supervisor of the Engineering Research and Development Group at their Paulsboro (N.J.) Laboratory. . . W.P.I. Prof. Fred N. Webster, '39, writes that "While in Iceland on a tour this past summer my wife and I had the good fortune to be able to have dinner one night with Jon Steingrimsson and his wife. Jon is with the National Electrical Power Board in Iceland, and was kind enough to take us on a personally conducted tour of Reykjavik one afternoon. Among the sights were a new gas turbine power plant that was being installed in connection with power service for a new aluminum plant, and also Jon's new home which he is building in one of the suburbs of the city. Jon wished to be remembered to all his friends here on the Hill." . . . Richard R. Carlson has been appointed Project Engineer in the Plant Engineering Dept. of Avco Bay State Abrasives Div., Westboro, Mass.

1954

William H. Hills remains with Monsanto Co., at their Chemstrand Research Center, Inc. in Durham, N.C. He is Head of the Engineering Dept. there. . . Harry L. Mirick, Jr. writes, "In May, I accepted the position of Director of Manufacturing, Military Products Div., Hamilton Watch Co., in Lancaster, Pa. In my new position, I am responsible for the manufacture and support functions for the production of Ordnance fuses and allied devices. . ."

1955

John E. Edfors is Section Head of the Hardware Technology Dept. of Honeywell Inc. in Waltham, Mass. . . Peter H. Horstmann has been promoted to Vice-President of Engineering at Coppus Engineering Corp. in Worcester, Mass. . . Raynald P. Lemieux is Asst. Manager of Technical Service & Sales, Petroleum Catalysts, for the Engelhard Minerals & Chemicals Corp. in Newark, N.J.

1956

Howard H. Brown, Manager of the Motor Control Div. of the Vee-Arc Corp., has been elected to the firm's Board of Directors. He and his family live in Westboro, Mass. . . William E. Lloyd tells us, "Still employed by Bethlehem Steel Corp. Recently promoted to Assistant General Mechanical Foreman in the Coke Dept. at the Johnstown, Pa. plant. Have three boys aged, 9, 6, and 3."

1957

Allan T. Devault has been named Manager of the newly created Control Products Line by Digital Equipment Corp., Maynard, Mass. . . . Itek Corp. employs Robert A. White as a Senior Manufacturing Engineer in Lexington, Mass. . . Richard P. Johnson has received his MBA from Northeastern University. He is employed as a Product Sales Engineer for the Foxboro Co., Foxboro, Mass.

1958

Born: To Mr. and Mrs. Norman J. Taupeka, a daughter, Mary Ann, on July 14, 1969. Norm and his family live in Eatontown, N.J.

Richard H. Campbell is now at David Clark Co. of Worcester, Mass., as a Consulting Electro-Acoustical Engineer. . . Frederic F. Cossick is presently employed by Burgess & Behr of Carmel, N.Y. as a land surveyor. . . DeSoto, Inc. has announced the promotion of Michael M. Galbraith to Production Manager of their Chicago Heights Plant, Chemical Coatings Div. . . Robert H. MacGillivray is in Fukui-ken, Japan, where he is a Field Engineer in Nuclear Power for General Electric Technical Services Co. . . Harry R. Rydstrom is District Plant Superintendent for the Bell Telephone Co. in Oakmont, Pa. . . . Norman J. Taupeka was awarded the

U.S. Army Electronics Command certificate of educational achievement. He works for the U.S. Army Electronics Command's Communications-Automatic Data Processing Lab., Fort Monmouth, N.J. . . Larry Dworkin has received his Ph.D. in Electrical Engineering from the Polytechnic Institute of Brooklyn. . . . Gabriel N. Gaulin is an Installation Engineer for Pratt & Whitney Aircraft, Div. of United Aircraft Corp., in East Hartford, Conn. . . Marian C. Knight has received his M.S. in Electrical Engineering from Northeastern University. He is employed as an Advanced Development Engineer by Sylvania Electronic Systems. . . Peter J. Zanini, Jr. is a Power Supply Engineer for Hi-G Inc. in Windsor Locks, Conn.

1959

Married: Charles N. Coniaris to Miss Eileen Theresa Feeley on May 4, 1968. He is presently an Airport Designer for the Port Authority of New York and is also studying for his Masters in Transportation Planning at Polytechnic Institute of Brooklyn. Robert A. Bleau is an Electronic Engineer for Sanders Associates in Nashua, N.H. . . Computer Data Systems employs Fred D. Blonder as a Division Manager in Miami, Fla. . . V. James Cinquina, Jr. is a Design Engineer at St. Regis Paper Co. in W. Nyack, N.Y. . . Two members of the class have joined the clergy. Rev. Harvey E. Egan, S.J. was ordained to the priesthood in the Society of Jesus (Jesuits) by Richard Cardinal Cushing, Archbishop of Boston on May 31, 1969. . . Richard E. Thompson graduated magna cum laude with a bachelor of divinity degree from Drew University on May 31, 1969. He has been named associate pastor of Wesley Methodist Church in Worcester. . . Walter M. Gasek has received his MBA degree from Clark University. He is presently General Manager of Kenmore Research, Framingham, Mass. . . Frank B. Goudey, Jr. is the owner of his own construction company, Goudey Construction Co., Inc. in E. Bridgewater, Mass. . . Chester F. Jacobson is a Design Engineer for General Electric Co. in Schenectady, N.Y. . . David S. Miller has become Plant Manager and Asst. Div. Manager of Sprague Electric Co., Filter Div., Annapolis Jct., Md. . . Norman L. Monks and David A. Sawin received promotions from Hobbs Manufacturing Co. Monks will be Manager of the Manufacturing Div. while Sawin will head the Planning Div. . . Francis J. Pakulski is a Development Engineer for the IBM Corp. in Essex Jct., Vt. . . David H. Treadwell, Jr. has gone into partnership to form the new firm of Panatek, a design and engineering oriented organization. He and his family live in Foxboro, Mass. . . George B. Constantine is a Sales Engineer for General Electric Co. in So. Portland, Me. . . Robert W. Hoag received his MBA degree

from the University of Rhode Island. He was recently promoted to Senior Design Engineer, Energy Products Dept., Texas Instruments Inc. in Attleboro, Mass. . . Robert A. Steen is President of Recreational Enterprises, Inc., located in Killington, Vt.

1960

Raymond P. Abraham has become manager of the new downtown store of Al Abraham in Norwich, Conn. . . The Carlson Corp. in Cochituate, Mass. employs George S. Beebe as a project planner. . . Dr. Robert A. Condrate writes: "I am now an assistant professor of spectroscopy at Alfred University, Alfred, N.Y. My first Ph.D. student has passed his final oral exam. Besides our daughter, Barbara, we also have a son, Robert, Jr., who is now two years old." . . . Frank A. Droms, Jr. has received his M.S. in industrial administration at Union College, Schenectady, N.Y... David A. Johnson remains in the Eastman Kodak Co. System but has moved to Oak Brook, III., where he is a Technical Sales Representative. . . The new Manager of Engineering at Trump-Ross Industrial Controls, Inc., No. Billerica, Mass. is Peter A. Lajoie. . . Warrant Officer Robert M. Neal will serve in Vietnam for the next year. . . Robert R. Nelson is employed by The General Electric Co. of Fitchburg, Mass. . . The Royal Thai Army employs Thavalya Prapapant as a structural engineer. . . . Harry F. Ray has become manufacturing representative and start-up superintendent for 3 new rubber chemical units for Monsanto Co. in Nitro, W. Va. . . H. David Sutton is a Sr. Electrical Engineer at Sanders Associates, Nashua, N.H. . . James F. Teixeira remains at Sylvania in Waltham, Mass, where he is now an Advanced Research Engineer. He has been awarded a patent for an electronic device designed to aid the entering of data in a computer. . . Shepard B. Brodie received his M.S. in Aerospace Engineering and Mechanical Engineering from the University of Arizona in 1967 and 196B respectively. He is presently employed as a Staff Engineer for the Martin Marietta Corp. in Denver, Col. . . John R. Haavisto is a Technical Editor for the Hughes Aircraft Co. in Fullerton, Calif.

1961

Married: Ralph M. Dykstra to Miss Connie Kaye Brown of E. Alton, III., on April 12, 1969. The couple will live in New York where Ralph is a Flight Engineer for Trans World Airlines.

Mark Britanisky is program manager and manager of program control at Fairchild - Hiller, Stratos Div., in Bay Shore, N.Y. . . Philip M. Crimmins is now at Oxford Paper Co.'s New York City office where he is a Sales Engineer. . . Digital Equipment Corp. has named Martin S. Gordon manager of its Control Systems Group, He and his family live in Maynard, Mass. . . Allen L. Johnson

is an Electronic Contract Engineer for Pollack & Skan of Chicago, III. . . Dr. Arthur S. Kamlet has received his Ph.D. from the University of Michigan. Arthur works for Bell Telephone Labs in Whippany, N.J. . . Ward D. MacKenzie is Product Development Manager for Digital Equipment Corp. in Maynard, Mass. . . Alan C. Novaco is a Sr. Systems Engineer for Westinghouse in Baltimore, Md. . . Philip Hankins Inc. in Arlington, Mass. employs David Q. Olson as a Programmer/Analyst. . . Pierce E. Rowe is employed as a Civil Engineer by Pittsburgh DesMoines Steel Co., Idaho Falls, Idaho. . . Dr. Robert E. Seamon has joined the staff of Los Alamos Scientific Laboratory in New Mexico to work with the Reactor Development Div. . . Robert H. Whyte is working for General Electric in Burlington, Vt. . . W. Dana Wilcock received his M.S. from the University of Connecticut. . . Major Norman I. Ginsburg is now Chief, Television Operations, Armed Forces Radio & Television Service, in Los Angeles, Calif. . . John H. Herron has been appointed Director of Manufacturing for the Fairfield Optical Co., Inc. in Mansfield, Mass. . . Charles S. Cook has received his M.S. degree in Transportation Planning from Polytechnic Institute of Brooklyn. . . Robert W. Schomber is Asst. to the President of the Pacemaker Corp. in Egg Harbor City, N.J.

1962

Married: Laurent A. Beauregard to Miss Evylene N. Mehl of Eatontown, N.J., on June 9, 196B. Larry is working towards a Ph.D. at Indiana University in the field of History & Philosophy of Science. He writes, "The whole idea is to get a better understanding of physics using its history and philosophy as tools."

Born: To Mr. and Mrs. David L. Goodman, their third son, William Louis, on April 18, 196B. Dave has been named Plant Manager of the Chlorox Co. in Chicago. . . Edward B. Allen, Jr. is a Product Planner with RCA Information System Div., Cherry Hill, N.J. . . William A. Brutsch has left the Air Force and is presently employed by Draper Div., North American Rockwell Corp., in Hopedale, Mass. as a Product Development Engineer. . . David W. France is a Project Engineer for United Shoe Machinery Corp.'s Development Labs in Beverly, Mass. . . Computer Transceiver System, Inc., employs Thomas J. Tully of Mahwah, N.J., as senior development engineer, . . Ralph H. Griswold is an Engineer K.A.D. for Eastman Kodak Co. in Rochester, N.Y. . . Dr. James D. Quirk received his Ph.D. from the University of New Hampshire. He is a Professor at Keene State College and is also President of Quirk's Marine Rentals in Keene, N.H.

1963

Married: Joseph V. Beaulac to Miss Elizabeth Rita Mills of Lunenburg, Mass., on

April 19, 1969. Paul G. Abajian was best man. Joe is a group leader at Raytheon in Wayland, Mass. . . W. James Budzyna to Miss Kathleen Ann Kelliher of Whitinsville, Mass., on June 7, 1969. They will live in Whitinsville.

Dr. Paul G. Abajian has been appointed an Assistant Professor of Chemistry at Johnson State College, Johnson, Vt. . . Stone & Webster Engineering Corp. of Boston employs Henry A. Dowgielewicz, Jr. as a Cost Engineer. . . Norman Fineberg is now attending Law School at Boston University. . . Richard A. Garvais is at the Fall Brook Plant of the Corning Glass Works, Corning, N.Y., as Manager of the Process Engineering Dept. . . Capt. Philip M. Howe is a research physicist at the U.S. Army Ballistic Research Laboratories located at the Aberdeen Proving Ground, Md. . . John B. Lojko is a Marketing Representative for Service Bureau Corp., a subsidiary of IBM Corp., in New York City. . . Thomas M. Owens is employed by Norton Co. in Worcester. . . Dr. Daniel J. Pender has graduated from the University of Pennsylvania Medical School and will intern at the Pennsylvania Hospital. . . Donald M. Wood, II has started his own business, Wood's Marine Supplies, in Lake Park, Fla. . . Dr. Robert E. Murphy is now Asst. Astronomer at the University of Hawaii Institute of Astronomy. He received his Ph.D. last February from Case Western Reserve University. . . James D. Clark is New Product Planner for the Xerox Corp., Communications Product Div. in Henrietta, N.Y. . . . Robert S. Magnant is a Systems Engineer and Technical Manager for U.S. Army ECOM at Ft. Monmouth, N.J. . . George P. Vittas received his M.S. degree in Transportation Planning from Polytechnic Institute of Brooklyn. . . Roger M. Winans is an Actuarial Asst. for the Travelers Insurance Co. in Hartford, Conn.

1964

Married: Alfred H. Hemingway, Jr. to Miss Julie Ellen Murphy of Framingham, Mass. on June 10, 1967. He is now studying Patent Law at Stanford University Law School, Stanford, Calif. . . Thomas S. Baron to Miss Dorothy Serafin of Worcester, Mass., on April 26, 1969. Tom is a Junior Civil Engineer for the Metropolitan District Commission, Construction Div., Boston, Mass. He is now back at Tech on a one year's educational leave of absence, working for his master's in civil engineering. . . ManMohan S. Gill, MS, to Miss Mary Jane Perry of W. Swanzy, N.H., in 1967. He is employed as a Mechanical Engineer in the Research and Development Center of the General Electric Co., Schenectady, N.Y.

Bruce M. Juhola is a Technical Sales Representative for Calgon Corp., Redwood City, Calif. . . Ensign David H. Laananen, who received his Ph.D. from Northeastern Univer-

sity last year, is now a Scientific Officer for the U.S. Navy, Office of Naval Research, in Washington, D.C. . . Church and Dwight Co., Inc. of Syracuse, N.Y. recently promoted M. Stephen Lajoie to Manager of Research and Development. . . Dr. Frank A. Marafioti, MS, has received his Ph.D. from the University of Connecticut and is now employed by General Dynamics, Electric Boat Div., as a Research Specialist. . . Robert H. Morse was recently appointed as Manager-Sales Promotion for MB Electronics, Div. of Textron Electronics Inc., New Haven, Conn. . . . Dr. Robert A. Peura has received his Ph.D. in Biomedical Engineering from Iowa State University. . . James C. Ward, Jr. is an Engineer for the Northeast Utilities Service Co. in Hartford, Conn. . . The State of New York employs William H. Clark, III as a Research Engineer at the State Campus, Albany, N.Y. . . Peter Baker is now in Saigon where he is on assignment for the Pacific Architects & Engineers of Los Angeles, Calif. . . During the summer we received a letter from Lt. Paul B. Watson bringing us up to date: "Right now I'm on leave, about to start flying the C-141 Starlifter at Dover AFB, Del. Since joining the USAF in January 1968, I've completed OTS, flight school, survival school, and the C-141 co-pilot course at Altus AFB, Okla."

1965

Married: Patrick T. Moran to Miss Mimi Moylan of Hammond, Ind. in June of 1969. Pat received his M.S. in Industrial Engineering from Purdue in June also. . . Thomas P. Arcari to Miss Marie Bartumioli of New Britain, Conn., on June 14, 1969. Tom is a Structural Design Engineer for Combustion Engineering in Windsor, Conn. . . Wayne D. Pobzeznik to Miss Patricia Ann Ciuffreda of Pittsfield, Mass., on June 21, 1969. Wayne is employed as a Field Engineer by General Electric Co. in Pittsfield.

Born: To Lt. and Mrs. William E. Zetterlund, their first child, Stefanie Lauren, on October 24, 1968. Bill is presently Public Works Officer and Resident Officer in Charge of Construction at the U.S. Naval Radio Station, Isabela, Puerto Rico.

There are several members of the Class who are now in the Armed Forces: Pvt. Lee A. Chouinard, stationed at Fort Sam Houston, Texas; Lt. David B. Herrmann, Jr., based at the U.S. Naval Base, Gulfport, Miss.; Capt. Frank J. Pinhack, Jr., decorated with the Distinguished Flying Cross at Nha Trang AB, Vietnam, will soon be stationed at Otis AFB; Army Capt. John M. Porter who is presently in Vietnam and recently received the Air Medal near Bac Lieu; Lt. (U.S. Naval Reserve) Francis X. Watson, FPO San Francisco, Calif.; Lt. William H. Wyman, who left the Navy in September after four years in the Submarine Force; and Capt. John G.

Zwyner, stationed at Stewart AFB, Newburgh, N.Y. . . George W. Cordes, Jr. is presently employed as a Development Engineer at Hamilton Standard, Div. of United Aircraft Corp. in Windsor Locks, Conn. . . Donald G. Franklin is working for the U.S. General Accounting Office in Washington as an Accountant-Auditor. . . The U.S. Army employs William S. Hagar as a Mechanical Engineer. . . Charles F. Hunnicutt is a member of the Technical Staff at Bell Telephone Labs in Whippany, N.J. He received his MS from R.P.I. last year. . . Robert D. Klauber writes, "Got my M.S. in M.E. from Syracuse University. Working for last 16 months at MIT Instrumentation Lab on inertial guidance system for Apollo Project. Planning to take at least a year off as of June 1, 1969 to travel around the world." . . . Harvey J. Rosenfield, MS, is now working as a Marketing Representative for IBM in Waltham, Mass. . . After a three year training program with the U.S. Bureau of Public Roads, Jeffrey W. Thwing is now working in their Arlington, Va. office as a Highway Engineer. . . Earle R. Weaver, M.S., is an Engineer with General Electric Co. of So. Portland, Me. . . Two members of the Class have received M.S. degrees from Polytechnic Institute of Brooklyn: Joseph J. Osvald in System Science and Takashi Tsujita in Mechanical Engineering. . . Philip B. Ryan is an MBA candidate at the Harvard Graduate School of Business Administration. . . Thomas F. Moriarty has received his Ph.D. in Engineering from the University of Illinois. He will be associated with Gulf Atomic in San Diego, Calif.

1966

Married: Michael R. Mauro to Miss Elaine M. Shepard of Guilford, Conn., on May 17, 1969. . . Ronald Swers to Miss Gwen M.

Herman of Worcester, Mass., on May 18. 1969. Ron is a Mechanical Engineer with General Electric Co., Lynn, Mass. . . Jonathan H. Pardee to Miss Susan L. Matthews of Media, Pa., on June 22, 1968. Jon is a Service Representative for E. I, DuPont de Nemours Co. in Wilmington, Del. . . David H. Stone to Miss Marie Frances Fiefhaus of Levittown, Pa. on April 12, 1969. Dave received his M.S. in Chemical Engineering last year from Cornell Institute and is employed by Rohm & Haas Co. of Bristol, Pa. as a Research Engineer, . . Frederick F. Valego, Jr. to Miss Martha Ann Doros of No. Brookfield, Mass., in June 1969. Fred is working for Monsanto Chemical Co. in Springfield. Mass., as a Chemical Process Development Engineer.

Born: To Mr. and Mrs. Gary P. Cassery, a daughter, Karen Gail, on May 21, 1969. Gary is a Graduate Student at the University of Tennessee working towards an MBA... To Mr. and Mrs. Andrew J. Kudarauskas, a son, Thomas A., on September 22, 1968. Andy is still working for Niagara Mohawk Power Corp. in Syracuse, N.Y. as Supervisor of Natural Gas Construction and Maintenance... To Mr. and Mrs. Donald W. Petersen, Jr., their first child, Gail Kristin, in September of 1968. Don is now working as a Systems Engineer for Dialog Computing, Inc., Milford, Conn. . . To Mr. and Mrs. Jesse R. Stalker, Jr., their first son, Kevin David, who is now one year old. Jesse has resumed work after two years in the Army, with Goodyear Tire & Rubber Co., Windsor, Vt.

Lt. Garner W. Duvall, Jr. is now serving in the U.S. Navy. . . Western Electric Co. of No. Andover, Mass., employs A. Ralph Fiore as a Development Engineer. Ralph received his MS in engineering management from Northeastern this year. . . Ronald F. Naventi

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is an Application Engineering Specialist for The Foxboro Co., Foxboro, Mass. . . William J. Remillong, Jr. is employed by American Cyanamid Co. of Bound Brook, N.J., as an Analytical Project Chemist. . Capt. Shelton B. Wicker, Jr. is presently stationed at Fort Richardson, Alaska. . . Peter K. Sommer has begun studies at the Washington College of Law of the American University in Washington, D.C. He hopes to specialize in Patent Law.

1967

Married: Richard H. Court, Jr. to Miss Sandra L. Wright on May 18, 1968. Dick is a Research Assistant at Geigy Chemical Corp. in Ardsley, N.Y. . . Capt. John P. Dow to Miss Vickie Lee Herold on February 22. 1969 in Frankfurt, West Germany, John has just started a tour of duty in Vietnam. . . William R. Hyatt to Miss Cynthia Marie Vinberg of Leawood, Kansas, on February 8, 1969. Bill is now with Ebasco Services, Inc. in Sioux City, Iowa. . . Lt. Peter H. Tallman to Miss Ellen Marie Maher of Munhall, Pa., on May 17, 1969. Pete is presently at the Pentagon, Washington, D.C. . . Ralph C. Olesen to Miss Gale Madeline Haznar of Chicopee, Mass., on June 21, 1969. Ralph continues his studies at Polytechnic Institute of Brooklyn while he works for Hazeltine Corp. of Greenlawn, N.Y. . . . Harry E. Taylor to Miss Lynda Hope Weston of W. Hartford, Conn., on May 31, 1969. Harry received his M.S. degree in engineering from Rensselaer Polytechnic Institute.

Born: To Mr. and Mrs. William O. Messer, a boy, William Joseph, on March 24, 1969. Bill is presently a Technical Representative for Hercules, Inc., Environmental Services Div., in Houston, Texas. . To Mr. and Mrs. Charles J. Sisitsky, a daughter, Tamar, on May 19, 1969. Charlie received his Master of Community Planning degree from the University of Rhode Island and is currently a Project Planner for Roy F. Weston, Inc. in West Chester, Pa.

John R. Daugherty is working as a Mathematician/Analyst for the U.S. Government in Washington, D.C. . . Edwards & Kelcey of Boston employs Steven J. Frymer as an Assistant Civil Engineer. . . 2nd Lt. Wayne C. Garth has been transferred from Hollomon AFB to the Satellite Control Facilities in Los Angeles, Calif. . . Robert F. Hellen is a Graduate Student at Cornell University. . . Frank T. Jodaitis is now serving his active duty in the Army, and will soon be serving in Vietnam. . . David W. Loomis has received his M.S. in Electrical Engineering from the University of Pennsylvania and is now a Senior Research Engineer at Sylvania Electric Corp. . . Arnold R. Miller is now an Electronic Design Engineer for the Eagle Signal Co. . . John E. Sonne has received his M.S. degree in Biomedical Engineering from Drexel Institute of Technology. . . Ensign Robert G. McAndrew has received his M.S. degree from Texas A&M University in Nuclear Engineering. He is stationed at Port Hueneme, Calif., where he will continue his officer training.

1968

Married: James A. Raslavsky to Miss Janet Cheryl Ferrante of Shrewsbury, Mass., on April 12, 1969. Jim remains at International Silver Co. in Meriden, Conn. as an Industrial Engineer. . . Jeffrey E. Shaw to Miss Carole Ann Marie Mistretta of Methuen, Mass., on April 12, 1969. John Korzick served as an usher at the wedding. Jeff is an Electrical Engineer at Western Electric Co. in North Andover, Mass... Marshall B. Taylor to Miss Nancy Hamilton Smith of Grafton, Mass. on June 7, 1969. Kenneth R. Blaisdell, John R. Farley, and Gregory H. Sovas served as ushers at Marshall's wedding. Marshall is a systems analyst with Allis-Chalmers in Hyde Park, Mass. . . Bruce M. Blades to Miss Linda Barbara McGaughey of Framingham, Mass., on June 7, 1969. Bruce is a Foreman for Howard M. Blades Construction in Framingham, Mass. . . Robert J. Horansky to Miss Linda Dunkel of Torrington, Conn., on June 14, 1969. Bob received his M.S. degree in Electric Power Systems from Rensselaer Polytechnic Institute and will be employed by Northeast Utilities Service Co., Hartford, Conn. . . Allen Palmer to Miss Rosemary Jean Plante of Shrewsbury, Mass. on June 14, 1969. Allen is a Test Engineer for the Hazeltine Corp., Electro-Acoustic Systems Lab, in Braintree, Mass.

Born: To Mr. and Mrs. Robert C. Gosling, a daughter, Lisa Ellen, on June 14, 1969. Bob is studying for his M.S. in the Civil Department at Tech.

David C. Baxter and Richard J. Scala are now working as Design Engineers for Torrington Co. in Torrington, Conn. . . Lt. Daniel C. Creamer is now serving in the U.S. Army. . . Digital Equipment Corp. of Maynard, Mass. now employs Ronald F. Golaszewski as a programmer. . . David A. Hopkinson has been commissioned a second Lt. in the U.S. Marine Corps. . . Douglas W. Klauber is presently a Research Engineer at Hollingswoth & Vose Co. in E. Walpole, Mass. . . Ensign William R. Nordstrom is serving aboard the U.S.S. Corry out of Norfolk, Va. . . 2nd Lt. John J. Orciuch is stationed at Fort Hood, Texas. . . Michael R. Paige has recaived his M.S. from the University of Illinois and will continue there as a Research Assistant working for his Ph.D. . . James M. Perkins is serving as a Light Weapons Infantryman in the U.S. Army. . . Lawrence J. Roger is now an Ensign in the U.S. Navy. . . Richard F. Weiner is working for Raytheon Co., Equipment Div., in Waltham, Mass. . . Pvt. Richard A. Westsmith

writes, "At present I'm in Vietnam with the Army working as a mechanic on one of their observation planes. . . Having only one year left of Active Duty, I hope to continue my Masters next year." . . . Piyush P. Amin, MS, is presently employed by Michael Baker, Jr. in Harrisburg, Pa., as a Bridge Design Engineer. . . Ensign R. Gregory Balmer is stationed aboard the Battleship U.S.S. New Jersey. . . Norman E. Brunell is an Electro-Mechanical Designer for the Foxboro Co., Foxboro, Mass. . . Theodor A. Heidt, Jr. is a District Sales Engineer in Training for the Torrington Co. in So. Bend, Ind. . . John E. Keenan is now with Keenan's Oil Service in W. Warwick, R.I. . . Jeffrey H. Semmel is a Research Engineer for Norton Co. in Worcester, Mass. . . Kenneth H. Turnbull is an Assoc. Mechanical Engineer for Texaco, Inc. in Beacon, N.Y. . . William J. Krikorian received his M.S. in Civil Engineering at the 101st Commencement of Tech. . . 2nd Lt. Richard G. Perreault is stationed in Schweinfurt, Germany, with the Army.

1960

Married: Brian D. Chace to Miss Elizabeth Marian Maxwell of Marion, Mass., on June 14, 1969. Brian is with Sylvania Electronics Systems Division in Needham Heights, Mass. Roger J. Dashner was best man, and James P. Atkinson was an usher. . . Anthony J. Crispino to Miss Linda Ann Czyzewski of Fiskdale, Mass., on July 5, 1969. Tony is a mechanical engineer with the Boeing Co. in Seattle, Wash. . . Joseph E. Doran, Jr., to Miss Ann Marie Meunier of No. Attleboro, Mass., on June 13, 1969. The best man was Bernard J. Dodge, '70, and among the ushers were Daniel A. Lipcan and E. Wayne Turnblom, '68. Joe is a management engineer employed by Avco's Lycoming Div. in Stratford, Conn. . . James W. Foley to Miss Ella Mae Beaudin of Rutland, Mass., on August 23, 1969. The best man was Robert P. Kusy. Jim is at Case Western Reserve University in Cleveland, Ohio, working toward his master's degree. . . Mark S. Gerber to Miss Sandra Frances Sowers of Shrewsbury, Mass., on June 6, 1969. . . William E. Hallock to Miss Judith Ann Groesbeck of Scotia, N.Y., on June 21, 1969. Among the ushers were Cornelius J. Collins, '71, and Wayne M. Chiapperini, '67. Bill is with Shell Oil Co. in E. Hartford, Conn. . . Jeffrey A. Hynds to Miss Linda Jean Wilson of Cumberland Hill, R.I., on July 12, 1969. Among the ushers were Roy Lampinski, '72, and Christopher J. Masklee. Jaff is employed by Public Service Electric & Gas Co. in Newark, N.J. . . Donald G. Johnson to Miss Janet Alice Johnson of W. Springfield, Mass., on June 21, 1969. Among the ushers was David W. Swenson. Don is with the Conn. State Highway Dept. in Wethersfield. . . Robert P. Kusy to Miss Gisela Bauar of W. Boylston,

WORCESTER POLYTECHNIC INSTITUTE

WINTER ATHLETIC SCHEDULE - 1969-70

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VARSITY WRESTLING

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VARSITY SWIMMING

Head Coach — KENNETH J. KAUFMAN

Becker Jr. Dartmouth Wesleyan Brown

Dec.

FRESHMAN BASKETBALL

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FRESHMAN SWIMMING

Head Coach — JOHN A. VINO FRESHMAN WRESTLING

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Head Coach — CARL S. PETERSON	Assumption Prep. Nichols	Tufts Coast Guard	Worcester Academy Dean Jr.	
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HOME GAMES PLAYED AT THE

WORC. ARENA



A on June 27, 1969. Bob is in graduate at Drexel Institute of Technology in Philadelphia. . . Ronald C. Lewis to Miss Judith Ellen Carney of Southwest Harbor, Me., on June 14, 1969. Ron is in the Navy. . . . Lt. Gordon R. Miller to Miss Carol Elizabeth Sargent of Reading, Mass., on June 15, 1969. Among the ushers was John L. Walkup, and the best man was Donald L. Sharp. Gordon is in the Army, stationed at Ft. Benning, Ga. . . Stephen F. Nagy to Miss Barbara Ann George of Ashland, Mass., on June 14, 1969. The best man was Ronald P. Rosadini, and among the ushers were George P. Moore, '70, Domenic J. Forcella, Jr., '70, and Charles E. Basner, '70. Steve is with Westinghouse Electric Corp. . . Michael G. Quellette to Miss Barbara Van Kleeck of Westboro, Mass., on July 12, 1969. Among the ushers was Peter R. Walsh. Mike is a product engineer with G.E. in Pittsfield, Mass. . . Stephen E. Platz to Miss Judith Evelyn Dickinson of Kennebunk, Me., or August 23, 1969. . . John F. Poblocki to Miss Gail Ann Piehler on June 15, 1969. Among the ushers were Richard J. Sandora and Ronald G. Roberts. John is a civil engineer for Metcalf & Eddy Engineers, Boston, Mass. . . Robert J. Rose to Miss Margaret Faith Weir of Framingham, Mass., on July 19. 1969. Among the ushers was Charles M. Zepp, and the best man was Craig L. Mading. Bob is a chemical research engineer with Dupont in Niagara Falls, N.Y. . . Joseph A. Senecal to Miss Linda M. Renzi of Marlboro, Mass., on August 16, 1969. Among the ushers was Jerry L. Johnson. Joe is a graduate student at Stanford University, Stanford, Calif. . . Raymond B. Stanley to Miss Penny Jane Bellinger of Westford, Mass., on June 21, 1969. Ray is with Western Electric Co. in Greensboro, N.C. . . John A. Taylor to Miss Maureen Maynard of Worcester on June 14, 1969. John is a development engineer with Eastman Kodak in Rochester, N.Y. . . Thomas F. Taylor to Miss Jeanne M. Petracone of Barre Plains, Mass., on August 23, 1969. The best man was Roger L. Gariepy, '67, and among the ushers was David E. Kilpatrick. Tom is a mechanical engineer for G.E. in Lynn, Mass. . . John S. Thompson, Jr. to Miss Helen Marie Grady of Natick, Mass., on June 15, 1969. David G. Healy was the best man, and among the ushers were Peter T. Grosch, Douglas A. Nelson, Roger W. Miles, Frederick G. Spreter, and Richard M. Gross. John is attending Harvard Business School in Cambridge, Mass.

CLASS OF 1930

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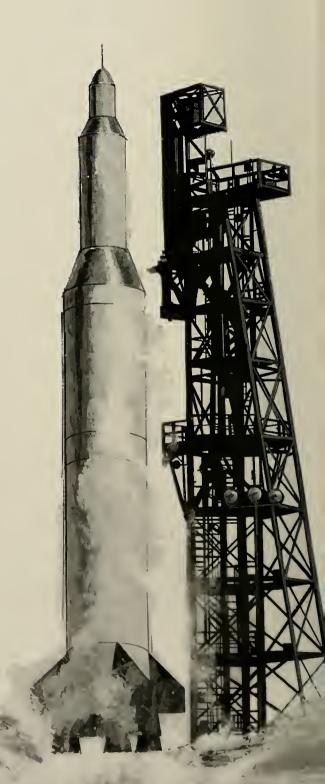




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Volume 73

Winter

Undergraduate Viewpoint

Your Class and Others

District Doings .

In Memory

Warren B. Zepp, '42

Editor and Business Manager

Stephen J. Hebert, '66
Assistant Editor and Business Manager

The Journal is published in the Fall, Winter, Spring, and Summer. Entered as second class matter July 26, 1918, at the Post Office, Worcester, Massachusetts, under the act of March 3, 1879. Subscription two dollars per year. Postmaster: Please send form 3579 to Alumni Association, Worcester Polytechnic Institute, Worcester, Mass. 01609.

Two Towers Subcommittee Reports page two
The Faculty Planning Committee, which last fall presented its model for WPI's second century, has now received some committee reports which study specific applications of the model. Included in this article are excerpts from some of those reports.
Civil Engineering Education at WPI — A Plan for the Challenges of the Modern Age by Carl H. Koontz, Professor and Head of Civil Engineering page six
The faculty has approved a new curriculum for the civil engineering department which will permit greater flexibility in undergraduate programs. This report shows how one department at WPI is attempting to keep up with our rapidly changing world.
The Gordon Library After 2 1/2 years by Albert G. Anderson, Jr., Head Librarian page fifteen
Although Gordon library is one of the newest facilities on campus, it is also one of the most popular and most widely used. Prof. Anderson explains some of the innovations and "unusual" areas in Gordon Library.
ROTC at WPI — Very Much Alive by Col. Edward J. Geaney, Jr., Professor of Military Science page seventeen
The ROTC program became entirely voluntary with the start of classes in September, 1969. Several innovations have been incorporated into the program which have helped to maintain a high enrollment.
A New Techniquest in 1970 by Dr. Raymond R. Hagglund, '56, Assoc. Professor, Mechanical Engineering page twenty
Techniquest has been revised to include more of an engineering approach. This will enable the program to better orient a prospective freshman to engineering and to WPI.
Leo S. Jansson Award page twenty-three
An annual award has been established in memory of Leo. Read this article to learn how you may aid this award.
Tax and Transfer Problems in the Gift of Securities by Fred L. Broad, Jr., WPI Director of Development page twenty-five
Many people prefer to make gifts to their alma mater in the form of securities. In an informative article, Mr. Broad explains some of the recommended procedures for making gifts of this type.
Your Alumni Office page twenty-seven
The Alumni Association's daily operations are carried on by a staff of four full-time and several part-time secretaries in addition to the Secretary-Treasurer and the Assistant Secretary. Read this article to meet the people in the office and to learn what your Association does on an annual basis.
Twenty-first Annual Techni-Forum Attended by 22 Secondary School Guidance Counselors
DEPARTMENTS Campus Notes
Varsity Review
Alumni Fund Progress Report
A Faculty Viewpoint

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40

TWO TOWERS:

SUBCOMMITTEE REPORTS

In October, 1969, the Faculty Planning Committee held Planning Day II. It was an entire day, without classes, which was devoted to the presentation of a model for WPI's future and to discussion periods about the model. From the model and the discussions, nine subcommittees were established to further explore various topics. These subcommittees were as follows: Environment, Advising, Examinations, Graduate Program, Courses, Organization, Finances and Cost Estimation, Implementation, and Resource Development.

These committees were made up of volunteers representing the student body, faculty, and administration. In some instances, student subchairmen were appointed to study a particular area of interest in a committee's work. In every case, each committee member had an equal voice, and, in most cases, students made up a majority of the members on the committee.

As this issue of *The Journal* goes to press, two of the subcommittee reports have been completed and released. These are the Environment and the Advisory subcommittees. Other reports will follow shortly, while others, such as the Implementation report, must await the ideas and recommendations of other committees before they can be completed. Upon the completion of the subcommittee work, the Planning Committee will prepare a final report which will comprise their recommendations for the future course of WPI. This final report will hopefully be complete sometime during the spring of 1970.

Excerpts from the two completed subcommittee reports follow, printed as received and unedited by the Planning Committee.

ENVIRONMENT SUBCOMMITTEE

Attached are our reports on Overall Psyche; Non-Fraternity Life; Housing and Dining; Fraternities; Campus; Highland Street, Worcester, and the Consortium.

Students who enter WPI with intelligence and enthusiasm will continue to lose what spark of spontaneity they have unless the environment of the College is radically changed. In an attempt to look at some of the important aspects of environment, the following reports have been prepared by the various subcommittees on Environment and College Life. (Ed. Note: Each subcommittee was chaired by two undergraduates.)

Each report was written independently; similarities, differences, and contradictions in ideas and methods will be noticed. An inherent fear of rejection by a conservative faculty and student body has probably stifled our ability to create sparkling new ideas . . .

The recommendations presented here are by no means final ones. They are meant to stimulate thinking about our physical and psychological environments. There are barriers in the present physical environment here which must be eliminated, but changes in buildings alone will not solve our problem. We must still discover the "spiritual" catalyst that will make the reaction run and bring about the shifts in

attitude of both students and faculty that are so profoundly needed . . .

Overall Psyche Team

The purpose of this committee was to examine the psychological make-up of the Tech student, and to find ways to alter the environment to give us the best of all possible psyche.

Since many of a student's feelings for the College are formed in his freshman year, it would be wise to look for ways to make that year more encouraging than it is now. The freshman environment centers at this time (and for the immediate future) around the dormitory, and to make dorm life more livable should be one of our goals.

The freshman living in a dormitory feels more like an inmate than a resident. The sameness of the rooms with their pastel-colored walls and everything-bolted-together furnishings is nothing less than oppressive. We feel that the dorm resident should be allowed to paint, partition, poster, and rearrange his room any way he pleases . . .

The opportunity presents itself to do something positive by inventing a new breed of dorm counselor, one who is more of a teacher than a policeman. Chosen by a committee of faculty and students, he would need a new set of qualifications: the ability and desire to communicate, broad knowledge of the assets of the College and the city, and an interest in people . . . It's a task best left for graduate students and seniors.

Though we are examining the overall psyche of the WPI community, the student's individual psyche must also be considered. The need for a psychological counseling service was pointed up by the visit of Dr. George Higgins to the campus. Right now, for a Tech student to begin to go crazy is simply insane. There is almost no one to help him . . .

The drudgery imposed by much of the curriculum is partly to blame. Even if the model succeeds in eliminating that, something positive has to be done to unsquash the WPI mind. More vehicles for creativity should be provided both in and out of the classroom . . .

The single most important factor influencing studentfaculty interest and pride in the College is its name. "Worcester Polytechnic Institute" is not very inspiring as names go . . . Worcester Polytechnic Institute. The first word is obvious. It represents the general location of the College . . . Polytechnic: relating or devoted to instruction in many technical arts or applied sciences. That definition certainly describes WPI before 1950 . . . The word Polytechnic is far too confining and exceptionally misleading to the prospective college student and the general public. Institute: a system of organized and often highly formalized belief, practice, or acceptance. That word fitted WPI like a glove up until about 1966 . . . Under the proposed planning model the College will be as totally unstructured as is possible; in other words, it will be the complete antithesis of the highly formalized practice required of an institute . . .

According to Dr. George Higgins of Trinity College, spontaneity is what sparks student interest in campus and non-campus activities. In order to promote this "spontaneity" it might be to the advantage of the College to establish a special organization, answerable to no one, to spark controversy. Its function would be to play devil's advocate, by constantly pushing for change . . . It will point out to the College areas that are starting to stagnate and which will stall the College's future progress . . .

Further Research Needed

In addition to the proposals previously outlined, other questions came up which the Overall Psyche Team felt needed further study . . .

- 1. A complete study of tradition and its role on campus should be undertaken . . .
- 2. Along similar lines, a study of Honor Societies on campus should be undertaken . . .
- 3. Does the college proposed under the model want to produce a stereotyped graduate as WPI does today? . . .
- 4. Finally, more study will have to be given to the question of spontaneity on a campus where "logic" is the watchword and the tried-and-true method is king . . .

Non-Fraternity Life

The Non-Fraternity Life study group began its discussions on the premise that, under the proposed model, the student of WPI should be given every available opportunity to develop himself intellectually, psychologically, physically, and socially within the environment of this school. By providing certain physical facilities, it is hoped that they may be taken advantage of by both students and faculty . . .

One of the major problems with non-fraternity life, presently, is that the upperclassmen who are now not members of fraternities must find housing off campus, which somewhat separates them from activities of the school. True, some of these people feel that they would like to live off campus segregated from the WPI environment, but many non-fraternity students feel that they do miss much, socially and academically, by living any distance from the school. If one has such a feeling, then some of his growth may be stunted as a result . . .

The subgroup proposes, as its basic solution, a living situation which is based on both academic and social awareness. It is hoped that such a situation will create a greater sense of community among both fraternity and non-fraternity members. To do this we suggest that the residential college system (much like that employed in the European universities) be incorporated within WPI.

Physically, the colleges would consist of a number of housing units. These housing units would contain approximately fifty students, and would be structured vertically ... as opposed to the present horizontal structure . . . Four or five of these housing units could be joined to make a larger dormitory (but in such a way that each section will preserve its individuality) or grouped together (though each unit will not be physically joined to another) in a small but well-landscaped area . . .

Each housing unit would provide several types of rooms to allow people to live alone, or in groups of two, three, or four . . . A lounge would also be located within each unit. Dining facilities would include a large dining hall to be located in one of the units . . .

The colleges should not segregate freshmen from upperclassmen at social activities. The units themselves should not be segregated as to sex, race, or class . . .

Many may feel that this system is a very good copy of the fraternity system. This is somewhat true, except for the ideas of selectivity and commitment present within the fraternity system, now. Though many of the physical objects proposed are found in fraternity houses, they are not now made available to non-fraternity students . . .

The Non-Fraternity study group proposes that the model discussed above be implemented in the Stoddard Residential Center, in order that this idea may be tested as to its practicality . . .

Housing And Dining Sub-Group Report

In the course of the following report we will present a housing and dining arrangement whose primary objective is providing a pleasantly livable and socially rewarding atmosphere during a student's stay at WPI... It is our hope that the model we propose will not be interpreted as a move to hold a student on campus, but rather it is designed to allow him to more naturally become a part of his environment instead of being driven away by it ...

The model we propose is a very flexible one and is centered about the concept of small living units placed near to the campus . . . Flexibility demands that a student live in an environment which is best for him, and if that proves to be living in a fraternity or an apartment, then he should not be forced into what we might think is best. . . We propose the construction of faculty apartments, built with a high level of quality and originality, which would allow those faculty members and their families to live in the midst of the campus without any sacrifice in living accommodations if they so desire. Graduate students, married or single, should also be provided with modern and attractive apartments . . .

Up to this point in the model no mention has been made of foreign students as a special entity. We feel that, despite special needs that will arise during a foreign student's stay at WPI, we would be doing him a great disservice by not completely integrating him with the rest of the community . . .

The dining function will be served by small dining units that will be conveniently placed among the living units . . . These small dining units are small enough not to be large mess halls, yet large enough to allow for the interaction of the residents of three different living units.

The relationship of the school to these units shall be a landlord function only. These units should definitely be owned and managed by the school as significant tax and loan advantages will be available due to the school's non-profit status...

Owing to the flexibility of the housing units (and assuming the condition regarding bathrooms is feasible as proposed), they would be as coed as is any apartment building on a room-by-room basis. We feel that this presents a realistic and true-to-life living arrangement . . .

Despite the fact that the first look at this proposal might cause one to shudder at the probable cost of this installation, we do feel that the model can be made economically feasible and still have moderate cost to the residents . . .

In summary, we feel that the above model provides for the important needs of community, privacy, and flexibility for all of those connected with the College.

Flexibility demands that a student live in an environment which is best for him . . .

Fraternities

- . . . Succinctly, our subcommittee goals were: (1) Increased opportunities for personal development; and (2) Closer student-faculty interaction. With this in mind the fraternity subgroup would make the following proposals:
- (1) Strongly urge and support the project-type, independent mode of education. The atmosphere of the fraternity is particularly conducive to this educational vehicle and is particularly appropriate to the educating of a humanistic technologist . . . The overwhelming advantage of the fraternity system lies in the fact that it . . . is an organization conducive to vertical as well as horizontal integration.
- (2) A stronger, more active IFC. It is apparent that there is a need for a coordinated, cohesive, united IFC in which all states are contributing towards and protecting individual development.

Areas with which the IFC could immediately research are: (A) Cooperative buying and bargaining, (B) A uniform accounting system and an auditor hired by the IFC, (C) An expanded social calendar to include non-fraternity students, (D) A system by which fraternity procedures and policies are constantly re-evaluated and upgraded, and (E) The whole topic of school loyalty and overall psyche at WPI is an untouched area where the IFC at other colleges have made great strides . . .

(3) A Dean of Fraternities . . . The College (should) employ a professional whose task is to give direction and advice to the fraternity system so as to encourage their integration with the school . . .

Campus

We have attempted to attack the campus life as it will need to change to meet the changing goal of the Institute. We have broken the problem into four parts (appearance, cultural and social life, sports, campus center) and through these hope to answer what we feel to be the major issues.

1. PROBLEMS:

(1) Campus Center; (2) Appearance; (3) Cultural Life and Social Life; (4) Sports.

II ANALYSIS OF PROBLEMS.

Campus Center: A large part of the lack of communications, cultural and social life, and student/faculty interaction is due to not having accommodations suitable. There is no central meeting point, where activities of all sorts can be carried on . . . Several locations were discussed, and it was decided that either on the quadrangle or directly off the quadrangle (next to the Stoddard Residence Halls) would be the best locations . . .

Appearance: . . . A major factor in attracting students is through buildings, landscaping, and overall appearance . . . We can no longer build to just necessity but will have to catch up to where society is today in its views and ideas. The present buildings will have to be developed as best possible to meet these standards . . .

Cultural and Social Life: There now is a major problem in communications among students, faculty, and administration. No one knows what is going on and often assumes that there is nothing happening that evening or weekend. A weekly calendar is greatly needed . . . The social life is the responsibility of the students and administration and will depend on the students. Here again a Campus Center would be a major addition.

Sports: As it seems that all mandatory classes will eventually be dropped, the sports program, other than varsity sports, is of concern. A possible answer is to give physical education classes credit as a full course. This would call for an increase in its desirability to students and in its capabilities. More facilities and a larger staff to accommodate a more varied program will be needed . . .

REPORT OF THE SUBCOMMITTEE ON ADVISING PROCEDURES

I INTRODUCTION.

... Our efforts were devoted to attempting to define the role, function, and responsibilities of the academic advisor, as contrasted with the other advisors, what the responsibilities of the student would be under the plan with respect to advice offered, and finally, attempting to define what kind of relationship we would hope to see emerge between advisor and advisee and how that relationship might be fostered and encouraged . . .

II ANALYSIS.

Although there was initially some feeling that the advisor should be a member of the student's chosen field of interest, our conclusion is that this is not a necessary condition to the development of a helpful and profitable student/advisor relationship . . . We feel that there should be an effort made to assign, on arrival, a student to a faculty person with whom he may be expected to have common interests (not necessarily interests of the technical or professional variety), and with whom, in the majority of cases, he would stay associated during the period of his undergraduate career. The responsibilities of the advisor

are: to assist the student in defining his educational goals; to aid in the transition from secondary school to the relatively unstructured situation at WPI; and to aid in the selection of basic courses. During the upperclass years, the advisor will help to define alternatives, keep in close contact with project advisors and coursework progress so that an accurate appraisal correlating all this information will be available to the student.

The responsibility of the student is to meet with his advisor at appropriate intervals, discussing with the advisor the goals he has formulated and the progress he is making toward them . . .

An estimate of the time required to perform the function described above is rather difficult to provide; a consensus seemed to be that advising, if done ideally, and under the conditions as specified in the next section, would require between ten and twenty percent of the faculty member's time . . . The "Council of Advisors" (to use the term appearing in the Planning Committee's report) should serve to reinforce the advisory group . . .

III RECOMMENDATIONS.

- 1. The entire faculty should be involved in the advising of students, along with interested administrators . . .
- 2. Each advisor would have a distribution of classes as advisees . . .
- 3. The number of advisees per class per advisor should be limited to three or four, and fairly close control should be exerted to hold the total number of advisees per faculty member at this level . . .
- 4. The equivalent of a one-credit course should be scheduled for each advisor with his Freshmen advisees . . .
- 5. A Council of Advisors should be provided to plan, operate, and evaluate orientation programs for faculty (both present and incoming) and students...
- 6. To augment the current medical, religious, and counseling services, the College should investigate the possibility of securing the services of a clinical psychologist on a part-time basis . . .

IV CONCLUSIONS.

There have been concerns expressed that under a system such as the model describes, success will be due in large measure to the nature, quality, and effectiveness of the advising system. While the subcommittee agrees that effective counseling/advising is important, . . there will be students who will not avail themselves of the system any more than necessary and who will do well or badly in spite of, not because of, the system . . .

As the situation changes and the model becomes reality, problems impossible to foresee at this point will be certain to occur; the best that can be hoped for is that the advisors and their council will be sufficiently flexible to deal with them, and that the entire problem will be accorded continuing scrutiny by all concerned.

CIVIL ENGINEERING EDUCATION AT WPI

A PLAN FOR THE CHALLENGES OF THE MODERN AGE

by
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Professor and Head of Civil Engineering



Ed. Note: Since the following article was written, the Faculty has approved the proposed program, effective with the spring term of 1970. Following the trend for more flexibility in individual programs, the adopted plan calls for only twelve required civil engineering courses. The traditional sophomore math, physics, and physical education courses will still be required, but the remainder of the program will consist of elective courses. Six elective courses must be from the offerings in humanities and social studies. The remaining twelve elective courses must include one course each from the areas of environment, planning, structures and transportation. This will leave eight courses which can be selected to best meet individual needs. Another feature will be the possibility of selecting a program which will lead directly to a master's degree.

INTRODUCTION

From the broadest viewpoint, all technical and scientific resources may be classified into one or any combination of three areas denoted as energy, materials, and information. Engineering progress in these areas has produced, deliberately or by accident, an involved pattern of organized systems of men, machines, structures, and environment designed to handle and process energy, materials, and information. As a natural consequence, engineering practice has evolved as a system made up of four major subsystems dealing broadly with machines (mechanical engineering), chemical processes (chemical engineering), energy and information (electrical engineering), and physical environment (civil engineering). It is largely through these systems that man seeks to control his physical and economic environment while he expands his social and cultural achievements.

Traditional engineering practice of the past and of the present has placed major emphasis on design and development which can be incorporated into the technical systems of energy materials and information. Unfortunately, not enough attention has been given to the fact that technical systems must operate within a framework of human values defined by ethical, moral, religious, and cultural considerations together with their legal and economic consequences. Every significant advance of civilized society has been the result of very complicated and dynamic arrays of forces produced as technological developments are forced into the framework of human values. An unstable balance-of-power situation exists with the balance point constantly shifting as technology advances and mutations of the technological system develop or as patterns of human values change. Resulting imbalances generate severe conflicts between the technical system and the current framework of human values.

As an example, the present stage of development and use of the modern internal combustion engine represents a truly great technological achievement. The benefits derived from it by our modern society are of immeasurable value. Modern mechanical marvels, powered by the internal combustion engine, rapidly transport products of commerce, which are also the result of technological progress, from points of origin to centers of consumption. Separated by thousands of miles, all people are communal in the sense of a mutual sharing of the products of their labors and wealth made possible through spectacular systems of transportation and of communication. Similar advantages exist with respect to recreational, cultural, and other opportunities that are vastly important to the general well-being of mankind.

As further advances are made into this modern age of transportation, the failures associated directly or indirectly with the internal combustion engine are attracting more attention and becoming of greater immediate and future concern than the successes. As the major single source of air pollution, the internal combustion engine threatens the very health and well-being that it has been instrumental in enhancing in other ways. In localized areas, transportation by modern modes is now even less rapid than that by modes replaced. Injuries, deaths, and property damage resulting from the improper operation of vehicles have reached preponderant economic levels. Vast areas of valuable land, a precious natural resource, have been diverted from other uses, real and potential, to those associated with the movement and storage of vehicles.

The point made here is that the measure of value of an engineering accomplishment is obviously time dependent.

An engineering solution of yesterday can be an engineering problem of tomorrow; a success of yesterday, a failure of tomorrow. A need of yesterday can be an unwanted commodity of tomorrow. These are truths that can be evidenced by example after example. Human values determine what is success and what is failure. Human values change, sometimes rapidly and radically.

Unfortunately, there appears to be no way to completely avoid dislocations of forces and their resulting impact upon human values and society. The important thing, from the viewpoint of engineering practice and of engineering education, is to recognize that the engineer must move with equal ease between the abstract world of science and technology and the real world of people and culture. C. P. Snow, the British scientist and novelist, once spoke of these two worlds as the "two cultures", deploring the widening gap between the culture of the scientist and the culture of the humanist. He, as well as most engineers and engineering educators of the past and of today, overlooked the fact that the engineer is the bridge between the two.

By virtue of education and inclination, the engineer, almost alone, must shuttle between the "two cultures". The conflict between East and West, the conflicts between different economic and political systems, the rising aspirations of the economically depressed, the explosion in scientific knowledge, the rapidly accelerating growth of human population, all of these factors and many more make technological advance an absolute necessity. But even while society demands engineering progress as necessary for physical well-being, health, comfort, and safety, for higher standards of production and consumption, for a better way of life for all, it must, quite properly, insist that engineers design organized technological systems also to preserve, protect, and enhance those social, ethical, moral, and legal institutions which truly represent the highest aspiration of the culture of which the engineer is a part. This places an incredible burden of responsibility on the engineer. He must creatively exploit scientific knowledge to improve existing, or to design new, technological systems, while protecting and enhancing national cultural and social aspirations. Although no man, nor any group of men, is sufficiently wise to foresee all the social and cultural stresses created by an advance in technology, engineers have a responsibility to minimize dislocations antithetical to the expressed aspirations of their city, state, nation, or culture. Failing in this, they may destroy the very essence of the culture they are striving to protect and enhance.

Engineering education, as it was formulated in the not-too-recent past and as it has existed even to today, was obviously geared to a consideration of those needs of society and human values associated with the "industrial revolution". Truly to be admired are those educational leaders of the past century who evolved patterns of

education completely attuned to the practice of engineering - practice that was, in all respects, completely compatible with societal needs and desires. Engineering practice was "hardware" oriented. Engineering designs produced those systems of machines and processes that made possible the development of an unprecedented technologically-based economy. With marvelous rapidity this nation became the most affluent society on earth. During that era, engineers made possible the tremendous productive capacity of our industrial complex. They engineered systems of transportation and communication which, indeed, made this nation a single community wherein all segments could achieve full mutual benefit from the natural and man-produced resources of all others. They made possible, and necessary, the development of our huge centers of population and provided the structural designs necessary to achieve compactness and conveniences compatible with then current standards. They produced those designs that have given modern personal convenience and comfort to individuals and to families. They have produced countless gadgetry designed specifically to make life more enjoyable.

In all respects, up to the recent past, engineering has been spectacularly successful in its role as the bridge between scientific and human cultures. It is speculated that the success it has enjoyed has tremendous influence on what appears to be a reluctance to reorient - a reluctance that is similarly reflected in engineering education. It is perhaps the case that the prolonged relevance of engineering practice and education, through several decades, to human values has led to a lulling of the senses. The importance of the real world of human values has been completely overshadowed by the successes of the past brought about in the abstract world of technology. Human values, the real or desired needs and interests of society, have changed over the past couple of decades, subtly at first but more explosively in the recent past. Prime need exists now not for the industrially-geared engineering systems of the past but for the sociologically-geared engineering systems attune with present values.

Man has constantly altered his environment through technological "progress". Such alterations generally force him to respond to the very changes he has caused. Accommodation, in the past, has been an evolutionary adaptation process. Technological advances of the recent past, accelerating at an ever-increasing rate, together with accelerating industrialization, urbanization, and population growth among others, all have combined to similarly accelerate the rate at which accommodation must be made in order to maintain proper balance between scientific and human value cultures. All have introduced new and serious threats to man's health and well-being. Accommodations can no longer be accomplished without rational planning.

This crisis in the affairs of man has become known in this land, and in other highly developed nations, as the urban crisis. Most of the ever-mounting problems that are as yet unsolved arise out of urbanization, and urbanization is the inescapable distribution pattern for populations of man's entire future. Transportation in and between urban centers, the preservation of land, air, water, power, and space, their allocation, collection, and treatment and disposal of wastes, preservation of recreational resources, rehabilitation, preservation of residential values, elimination of blighted areas, land values, commercial interests, industrial expansion — these are all contemporary problems that have not been adequately solved and that will continue to increase in magnitude and importance with time.

The exclusively man vs. machine age of engineering practice is obsolete. Human values today require a reoriented approach. The man vs. environment age of engineering is the pattern of the future if, indeed, it is not already overdue. The industrial crisis of the past has been replaced with the urban crisis of today. Engineering practice and engineering education must be reoriented to face the challenges of this crisis.

CIVIL ENGINEERING IN THE MODERN AGE

Through the ages, a great deal of attention has been given by many to a properly drawn definition of engineering in general and the various engineering disciplines in particular. It is difficult to resist the temptation to add still another inadequate definition to those already in existence for civil engineering, but preference is given to sensible indifference to the definition game. Civil engineering is simply what a civil engineer does. He knows what it is but generally is too busy doing it and enjoying it to worry about defining it. An insight into the wide variety of endeavors involved in civil engineering practice can be had from a perusal of the titles of the fourteen current technical divisions of the American Society of Civil Engineers: Aero-Space Transport, Construction, Engineering Mechanics, Highways, Hydraulics, Irrigation and Drainage, Pipeline, Power, Sanitary Engineering, Soil Mechanics and Foundations, Structural, Surveying and Mapping, Urban Planning and Development, and Waterways and Harbors, All of these can be broadly classified as components or functions in one or more of four broad subsystems in the total system of civil engineering practice: transportation systems, structural systems, environmental control systems, and urban planning systems.

Two all-important features dominate the practice of civil engineering and make such practice significantly different from the practice of engineering of the other classical disciplines. First, civil engineering design in any one of the areas delineated above is systems design. In most instances of civil engineering works, such systems become subsystems to a larger system in the sense that such works generally involve an amalgamation involving several of the delineated areas. Secondly, and perhaps most importantly, it should be

clear that civil engineering, much more than any other branch of engineering, is engineering for basic human needs. The involvement of the civil engineer with the society he serves is direct. Further, civil engineering, much more than any other branch, is interdisciplinary. Sanitary engineering and structural engineering, for example, have distinctly different scientific bases. The direct relation of civil engineering with people suggests an appropriate involvement with sociology, government, politics, economics, and administration, among others.

Clearly indicated is the fact that civil engineering practice must involve a systems engineering approach that takes into account the interdependence of all factors and permits decision-making on some rational basis. The piecemeal approach concentrated on limited and disjointed objectives such as air quality control, water quality control, sanitation, and transportation, each for its own sake, will continue, but systems analysis must be applied to these as subsystems of some total system. Ultimate design of a subsystem, impeccable as it may be, must ultimately stand the test of acceptability into the total system.

Systems analysis is not new to civil engineering practice. As previously described, design in any one of the divisions of practice involves systems analysis, and civil engineering works usually require the amalgamation of systems representing more than one of the recognized divisions. Systems analysis, as it is currently applied, is almost exclusively oriented toward technological aspects of design. Decidedly lacking is the all-important interface and interaction with social values. It should be clearly obvious that most effective decision making can be accomplished only with the aid of analysis based on all related elements that are significant subsystems of the total physical and social environmental system.

The problems involved in the environmental system have several common and general characteristics. They include several components. Each component contains several variables. Interactions between components are generally more important than the components themselves. Variation with time is a dominating factor. The allocation of limited resources and economic efficiency is an important consideration. Decisions must be made from that viewpoint. Such decisions must be made under a high degree of uncertainty about the future. Great dependence must exist on probabilities and statistical inferences. Solutions depend on quantification of the elements of the system. They depend also on optimization of the response of the system.

This is the challenge of the modern age to the practice of engineering. This is the challenge to engineering education. Because the traditional interests of the civil engineering profession have always spoken directly to the needs of society in all of the areas of concern, this, more than for any other discipline, is the direction in which civil engineering education must turn. It is not to be implied

that the environmental system is alone civil engineering. Far from it. However, that discipline is, inescapably, the key element and must play a dominant role in a systems engineering approach to the problems of the human environment.

These considerations lead conclusively and specifically to a non-traditional approach to the traditional education of civil engineers which will add new dimension and power. Each substantive application area must be pursued with a view to a central emphasis, the entire environmental system. Until such time as civil engineering education meets the objective of enhancing the ability of a student to deal effectively with modern problems in a particular setting; until such time as civil engineering education brings the student to the position of attaining a general problem solving ability that will permit him to contribute in a number of different problem settings; until such time as civil engineering education provides to the student the ability to integrate and interrelate aspects of several settings; until then, civil engineering practice and education, a key element in the modern age human environment problem, will not properly respond to its mission. Until then, all important decisions will continue to be made on the same basis as before, through artistic, political, or superficial economic considerations.

CURRICULA AND ANCILLARY CONSIDERATIONS

Only a few years ago, curricula of the various engineering disciplines had a narrowly oriented base in the so-called professional aspects of engineering design. Emphasis was on the methodology necessary to produce the hardware required to serve in the development of a rapidly developing industrial technology. In recent years, it became evident to some that the practice of engineering was lagging somewhat behind the explosive development of scientific knowledge. It was no doubt apparent to engineering educators and others, with an inborn bias toward technology and overwhelmingly influenced by the successes of the past, that continued successes could be accelerated only by emphasis, educationally, on the basic and engineering sciences. Influenced greatly by ASEE and ECPD, and by the availability of research funding, educational programs in engineering shifted toward a scientific base. At about the same time, sometimes strongly and irrationally resisted by engineering educators, pressures from other sources led to increased emphasis in curricula on liberal studies. This latter development could be interpreted as a recognition of the interface between engineering and human values. A frank evaluation might, however, lead to the observation that efforts in this regard have been more rhetoric than they are of true significance.

What has been the result is evidenced by most present day engineering curricula. Everything that has been done in undergraduate education has been forced into the time-old framework of a four-year curriculum. Reluctance to change and a failure to recognize that change is in order have led to the retention of traditional, and sometimes obsolete, coursework and programs. The time honored emphasis on producing specialists of one sort or another has been generally retained, perhaps watered down as the result of time restrictions, but still recognizable and still geared to an emphasis on industrial development.

But far worse, graduate engineering education serves further to entrench the traditional and sometimes outmoded patterns of the past. True specialties in narrow areas are developed at the M.S. level and, in a sense, almost trivial facets of a specialty are highly developed at more advanced levels. While society with its problems demands a more broadly educated engineer, education continues to produce an overabundance of those ever more narrowly oriented. These, in general, become the educators of new generations, and the system is self-perpetuating.

It is not to be implied from the above statements that there no longer is need for the engineering specialist capable to design technological systems much the same as in the past. It is also not to be implied that there is no longer need for the engineering researcher deeply involved in the technical aspects that lie at the base of engineering solutions. The broad range of works in civil engineering practice requires, for many, inevitable specialization over only a limited range of the technological spectrum in order that distinct and worthwhile contributions can be made to the whole. On the other hand, complex projects require civil engineering generalists with a broad understanding of several of the areas of the profession. These considerations have a complex influence on civil engineering educational programs in that they require the opportunity for breadth as well as depth in the technically oriented portions of the curriculum. Further, since the most significant characteristic of the technical output of today's civil engineer is its influence on society, a properly oriented civil engineering curriculum must provide a balance between technological content and that associated with social responsibility. It is this latter element, heretofore generally lacking in the mental equipment of the young civil engineer, that must receive considerable attention in his education.

Although the technical aspects of civil engineering are, as they always have been, key elements in the human needs problems of engineering, other disciplines are also involved. A few of the more important are sociology, government and politics, management and administration, business and economics and others such as the basic sciences and biology and public health aspects of medicine. The broad educational perspective is at least the opportunity for a complete interdisciplinary approach providing strong linkages among various of the supporting elements.

Another important consideration is involvement. In civil engineering practice there is direct involvement of the practitioner in problems at the human interface. Oppor-

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CAMPUS NOTES

CURRICULUM CHANGES Computer Science Program

The faculty has approved an undergraduate degree program in computer science effective in the fall of 1970. It is added to the degree programs at WPI only one year after a master's degree program in computer science was adopted at WPI. The new program, however, is only a degree-granting program and is not a department. It was adopted to offer undergraduate students a coherent and meaningful sequence of courses in computer science to support their educational and technical training, or to prepare them, if they so desire, for professional careers in the computer science field.

The program will include such courses as Higher Level Programming, Digital Computing Processes, Systems

Programming, Business Data Processing, and Introduction to Analog/Hybrid Computer Programming. In addition, humanistic courses such as Social Implications of Information Processing and Human Factors in Computer-based Systems will be required. The program is designed to follow two computer courses presently offered as electives in the freshman year, and it will result in the awarding of a Bachelor of Science degree at the end of four years.

Physics Curriculum

The faculty has also approved a curriculum change for undergraduate physics majors which will allow a greater degree of flexibility in their program. In a move which will permit physics majors to better meet career objectives, the new program has re-

duced the number of required credits in the junior and senior years to 15 per semester from the previous requirement of 18 credits per semester each year.

The new program requires 42 credit hours in physics and 21 credit hours in mathematics for graduation as opposed to the previous requirements of 51 credits in physics and 27 credits in mathematics. Also available will be an option for the student to take a lab course or a project course.

WORCESTER CONSORTIUM PARTICIPATION

Formed in 1968 with a goal of broadening and enriching academic and continuing education opportunities in the Worcester area, the Worcester Consortium for Higher Education, Inc. has shown continual growth, and interest is increasing. Figures for the fall semester of 1969 indicate a total of 173 Worcester-area college students cross registered. This was a marked increase over the 96 students who participated in the program during the spring semester of 1969. In addition, each semester, a number of students enroll in courses at the Worcester Art Museum, and these figures are not included in the totals shown.

WPI participation has been somewhat limited and involved a total of 18 students and 63 credit hours of cross registration at other schools during the fall semester of 1969. This included 12 students who attended Clark University courses during the day and six students who participated in evening courses at Clark. Cross registration from other schools to WPI last fall included two from Assumption, nine from Clark, and five from Holy Cross.



Freshmen receive their grades and register for the second semester.



Construction of Stoddard Residence Center progresses rapidly toward an anticipated completion date of early fall, 1970.

Clark and Holy Cross have been the most active participants in the Consortium. Last fall 74 Clark students and 52 Holy Cross students registered at other institutions. These two schools were also popular with students from other schools, as 76 registered at Clark and 57 participated at Holy Cross.

MORATORIUM ACTIVITY

WPI had a somewhat limited involvement in the Vietnam moratoriums last fall. The October moratorium involved a varying number of students and WPI personnel throughout the day. The decision to hold classes on that day was left to each instructor and in most cases classes were held, but the attendance was low. The day began with about 75 students attending a teach-in at Olin Hall which was a brief history class about the Vietnam war. Later that morning, about 20 WPI students joined a large number of students from other area colleges in distributing anti-war leaflets and petitions throughout the city.

The largest activity of the day was a peace rally by college students in

downtown Worcester. An estimated 400 WPI students participated in the rally and the peaceful and orderly march downtown from the campus. The rally included speakers from many of the area colleges, but WPI was not represented on the speaker's platform.

The march on Washington was attended by about 40 WPI students who made the trip to Washington by chartered bus. Most of those who attended found sleeping quarters on the gymnasium floor at Catholic University, and at least some were disappointed that the march failed to gain more attention than it did in Washington, According to Paul J. Cleary, '71, who attended and wrote the following for the Tech News, "Most people in the city paid little attention to the 240,000 marchers...The President's ability to ignore large-scale dissatisfaction is incredible...The march is over now and no change in our Vietnam policy has been effected. In that light, the march on Washington can only be judged as the most impressive failure in the history of anti-Vietnam protests."

COMMUNITY COUNCIL FORMED

A Tech Community Council has been formed on campus as a method for the faculty, students, and administration to get together on an equal basis to discuss anything which concerns WPI. It is the first time in the history of the Institute that a formally structured organization such as this has ever existed. The Council is composed of 13 members, six of whom are students, and includes the following distribution: five undergraduates, one graduate student, four faculty, and three administration members. The undergraduate student body elected two students, one faculty member, and one administrator; the graduate students elected their representative; the faculty elected one student, two faculty members, and one administrator; and the President appointed one student, one faculty member, and one administrator.

The Council was not formed to be an action group on campus, nor was it formed to supercede any existing campus organization. Rather it was formed with the sole purpose of providing a forum for discussion. From the discussions, however, the Council will be able to make recommendations to groups on campus, so that they may take any appropriate action. Thus a new method has been introduced on campus for improving communication among students, faculty, and the administration.

Faculty:

Roy F. Bourgault, '42

Mechanical Engineering

Richard V. Olson, '54

Mathematics

Armand J. Silva

Civil Engineering

Benjamin A. Wooten

Physics

Students:

Leonard Polizzotto, '70, E.E.

.. Westbury, N. Y.

Vincent T. Pace, '71, E.E.

W. Hartford, Conn.

Paul B. Popinchalk, '71, M.E.

Norwich, Conn.

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James A. Henderson, '72, E.E.

New Haven, Conn.

Robert H. Epstein, '73

Woodmere, N. Y.

Graduate Student:

James I. Joubert, '66, Ch.E.

Worcester, Mass.

Administration:

William F. Elliott, '66

Assistant Director of Admissions

Kenneth A. Nourse

Associate Dean of Student Affairs

and Director of Admissions

Gardner T. Pierce

Administrative Assistant to the President

GLEE CLUB ON TOUR

The WPI Glee Club, under the very capable direction of Prof. Louis Curran, will make a one-week concert tour during the week of March 30, 1970. The itinerary will include Albany, N.Y., Pittsburgh, Pa., and Cleveland, Ohio. In each city, the Glee Club will present an evening concert, with a local girls' college if possible, for WPI alumni, friends, and the public. This will be followed the next morning by an appearance in at least one of the area high schools.

The Glee Club will also travel to New York City for a Palm Sunday afternoon concert at St. Thomas Cathedral. In addition, a trip to the Washington, D.C. area is being considered for mid-April.

The tour to Albany, Pittsburgh, and Cleveland is being sponsored as a joint venture by the Glee Club as a worthwhile musical experience; by the Admissions Office as a public relations activity; and by the Alumni Association as alumni chapter activity. It is hoped that a majority of the housing on this trip will be provided by alumni, parents of students, and friends.

The Glee Club currently consists of over 60 members. They have been extremely successful in recent years and already this academic year they have presented two impressive concerts in Worcester and Boston with Wheelock College.

CHANGE TO COMPUTER

The Alumni Association is currently converting its record system to storage on the Worcester Area College Computation Center computer. In a move which is also being made by several other Worcester-area colleges, the Association will be able to more effectively serve both her alumni and the school when the conversion is completed around March 1, 1970.

Among the benefits, the change will enable the Association to address most of its mail with the computer, it will maintain a more current record system in regards to addresses and

businesses, it will provide a more effective Alumni Fund program by providing frequent up-dates of participation, it will enable district alumni chapters to maintain closer contact with area alumni, and it will eliminate a large amount of time-consuming filing in the office.

A number of files, however, will still be maintained in the office for certain purposes. The computer is only as effective as the information which it contains, and the office personnel will be responsible for keeping it up to date. Thus the storage of records on the computer will increase the effectiveness with which the Association operates.



Sculptures by Michael Phillips and Curtis Crystal which have been on display on the quadrangle since last October.

VARSITY REVIEW

Basketball

At press time, the Engineers have compiled a respectable 4-5 record in Coach Jim Herrion's first year at WPI as head basketball coach. Herrion, who was a former assistant and freshman coach at Holy Cross under Jack Donahue, is presently a guidance counselor at Tantasqua Regional High School in Sturbridge. He has instilled new desire and hustle in his hoopsters, and his efforts have paid off. While the record is 4-5, two of those losses came in close ball games away from home against well-regarded Dartmouth and Wesleyan.

They opened the season in Hanover, N.H., against a much taller Dartmouth quintet. Using a full court zone press and a deliberate offense, WPI was in the ball game all the way, tying the score on several occasions, before bowing, 67-58. It was a well-rounded team effort with junior Steve Watson of Syosset, N.Y. and sophomore Jim Henderson of New Haven, Conn. providing the board strength, while junior Ned Cunningham of Waterbury, Conn. and junior co-captain Tim Rooney of Ludlow, Mass. led the offense with 20 and 21 points respectively.

On their next outing the Engineers evened their record at 1-1 by rolling over a small Brooklyn College team, 83-52. Once again a strong defense, which caused 27 turnovers, and strong rebounding played a major role. Tim Rooney led all scorers with 25 points. and Jim Henderson chipped in with 13 points and a large number of rebounds and blocked shots. Rooney, incidentally, was 22 for 24 from the foul line in his first two games. The hoopsters next lost a heartbreaker to Wesleyan, 77-75, in a double overtime ball game. After being down 36-28 at half time. they were psyched when they returned to the floor and fought back to tie the score at 62-62 at the end of regulation time. Ned Cunningham led WPI's scorers with 16 points.

Against a much taller Brown team WPI lost its third game of the season 75-64 in a Winter Weekend home game. The Engineers were plagued by poor shooting, poor rebounding, and an abundance of fouls which saw four WPI players foul out. The leading scorers were Rooney with 17, Cunningham with 15, and junior Don Backlund of Rehoboth, Mass, with 12. The team brought its record to 2-3 in a well-played game at home against Amherst, winning 70-67. Once again the zone press created a number of scoring opportunities and offensively the team was led by some fine foul shooting and ball handling by Tim Rooney.

In other games in this first portion of the season, the Engineers lost to nationally-ranked Assumption, 101-75; lost to MIT, 87-61; defeated Bowdoin, 83-64, and defeated Lowell 98-75.

There are only two seniors on the team, and they have seen very little action so far. Co-captain Ollie Briggs of Rutland, Mass. was injured and did not dress for the first six games. The remainder of the squad is made up about evenly of juniors and sophomores and with the hustle and desire displayed so far, this "building year" should lead to bigger and better seasons in the future.

The freshman basketball team, however, has been a disappointment to Coach Ken Kaufman, who is in his first year of coaching at WPI. They lost their first six games, mostly by wide margins, although they played their best game at Wesleyan, losing by 4, 72-68. One bright spot has been the offensive play of Bill Ierardi of Hamden, Conn. He is the team's leading scorer and is averaging over 20 points a game, including a 45-point effort against MIT.

Swimming

After the first two meets of the season, the swimming team is off to an excellent start with a record of 2-0.

Led by sophomores Al Nafis and Bruce Eteson who turned in recordsetting performances. Coach Carl Peterson's Mermen dumped Holy Cross in their first meet 72-19. Nafis knocked a full six seconds off the school record in the 200-vard butterfly with a time of 2:35.5 and Eteson broke the school record in the 200vard breaststroke by 0.3 seconds with a time of 2:38.1. In the process of defeating Holy Cross, the strong WPI team won every event except diving and gave up only two second place finishes, thus showing its depth and balance.

Against a fairly strong Trinity College Swim team, WPI again showed its strength and depth by scoring a 67-27 victory. On their way to victory, the Engineers won eight of 11 events and set two school records. Al Nafis once again set a record, this time in the 500-yard free-style, with a time of 5:37.7. Sophomore John Loehmann also set a record with a winning time of 1:46.7 in the 100-yard individual medley. Other strong performances were turned in by co-captain Lou Zitnay and Tom Weil.

Coach Peterson has a good reason to be smiling these days. Not only is his varsity team undefeated, but his freshman team also has a perfect record, having scored impressive victories over Assumption Prep and Nichols. In addition, Steve Johnson, from Wethersfield, Conn., and Fred Baker, from Falmouth, Me., have been officially timed faster than the existing school records in the 200-yard breaststroke and 200-yard backstroke, respectively. Thus, with a strong freshman team and with sophomores setting school records on the varsity, it looks like the swimming outlook, not only for this

year but for the next few years, is very good.

Wrestling

After the first three matches of the season, Coach John Vino's wrestling team has a record of 1-2.

The Matmen opened the season against a relatively weak Brandeis team, defeating them 32-10. After forfeiting the 118-lb, and 126-lb, matches, they came up with four pins and four decisions to decisively defeat the Judges. Senior co-captains Lenny Polizzotto and Phil Warren, along with Jeff Petry, '72, and Art Geetersloh, '72, all came up with pins. Scott Wallace (134), Bobby Mills (150), Greg Dickson (158), and Ken Kolkebeck (190), all won by decisions. Outstanding spirit and conditioning were very much in evidence as WPI overcame injuries and illness to win their first match.

The Coast Guard Academy provided the opposition for the first home match, and they defeated WPI 34-10. It was a night which started out similar to the Brandeis match with WPI forfeiting the 118- and 126-lb. classes. Polizzotto then pinned his opponent in the first period, but Coast Guard came back to win the next three matches with two decisions and a pin. Jeff Petry then won his match by default, following an illegal slam which left him unconscious, but his were the last points WPI would score.

In their third encounter of the season, the Matmen lost to a strong M.I.T. team, 33-13. Winners for WPI were Geetersloh and John Zorabedian, who both won by falls, and Polizzotto, who decisioned his opponent. With his victory, Polizzotto brought his collegiate wrestling record to 33-4-1.

The same night, the frosh wrestlers lost in their first match of the season to M.I.T., 29-12. A promising prospect from this team appears to be Mike Varga of Danbury, Conn., who wrestles at 126 lbs.

In other wrestling action, Lenny Polizzotto captured the 134-lb. championship at the 7th Annual M.I.T. Christmas Holiday Open. He defeated four opponents on his way to the finals, and in the final match he pinned his opponent at 3:50 to make his record 8-0 for the season. WPI also did well as a team as they came up with a fifth place over-all finish in a field of 29 schools.

Sports Slants

Soccer team (7-2-1) named New England Small College Champions. Congratulations!...Mike Santora selected to the first team All-New England defensive football team for his play at right defensive end. Mike will be a co-captain of the team next fall along with Richard Lisauskas...Vic Fusia, head football coach at the University of Massachusetts, was the Fall Sports Banquet speaker...Sigma Phi Epsilon I.F. volleyball champions with 12-0 record...Former ROTC Sqt. Herbert Mello is the new trainer in the Athletic Department... Sig Ep and Shield leading I.F. basketball at press time...Hockey club had a record of 1-4 when they broke for exams.

SPRING SPORTS

Baseball

Coach Charlie McNulty, entering his 23rd season as head baseball coach at WPI, will have a large number of veterans to build his team around. Gone from last year's club, which compiled a 7-6 record, are only three starters: southpaw Art Katsaros, one of only two starting pitchers, and two outfielders, Ed Griffith and Bob Magarian.

McNulty will have his entire infield returning, along with his catcher, two pitchers, and one outfielder from a year ago. Co-captains John Pelli of Cranston, R.I., a catcher with two full years of experience, and Bob Johnson of W. Boylston, Mass., an outfielder, lead those returning. Other veterans

include first baseman Tom Rogers of Berlin, Conn.; second baseman Tim Rooney of Ludlow, Mass.; shortstop George Moore of N. Grafton, Mass.; third baseman Greg Sankey of Mansfield, Mass.; and infielder Steve Johnson of Holden, Mass.

Pitching appears to be the big question mark. The only hurlers returning are Bill Beloff of Rockport, Mass., a starter along with Katsaros last year, and relief pitcher Steve Katz of Worcester. Other prospects include Gary Smith of Holden, Mass., a starter two years ago who missed last season, and Jim Keefe of Arlington, Mass., who didn't play freshman ball last year.

The team opens the season April 11 with a scheduled doubleheader with MIT.

Track and Field

After compiling a somewhat disappointing 7-8 record last year, head coach Merl Norcross is looking forward to having a winning season this year. Graduation last year took, among others, Charlie Zepp, an outstanding 440-yd. man who holds the WPI record in that event, and sprinter Duncan Loomis.

Norcross will have a strong nucleus of veterans returning this spring which he will build his team around. Charlie Basner of Reading, Mass., in the dashes and the 440, and Tom Heinold of Leominster, Mass., in the weight events, will lead the team as cocaptains. Also returning will be middle distance man Bob Downie of Warwick, R.I., Mike Malone of Taunton, Mass. and Bill Light of Port Chester, N.Y., both distance runners. A question mark on the team will be sophomore Mark Dupuis of Lunenburg, Mass. Mark set freshman records last year in both the shot-put and discus events. but he suffered a serious knee injury during last fall's football season. The biggest weakness on the team appears to be in the hurdle events.

According to Coach Norcross, the freshmen, who participate in a limited schedule, appear to be quite strong.

The Gordon Library After 2½ Years

by
ALBERT G. ANDERSON
Head Librarian

Two and one-half years have passed since that bright day when the doors opened to the George C. Gordon Library. Yet not all immediate reactions to that day were optimistic. Many felt the library was going to be a white elephant with inexcusable expenses and perhaps even of little use. Some faculty and students bemoaned the fact that the departmental "libraries" were no more, and thus, the book and periodical collections in the new building would just draw dust. Few of the faculty and none of the students would hold with such ideas today, for this building more than any other has tied the Institute together. Departmentalization is gone when it comes to library operations. Everyone becomes a part of WPI when he enters the doors of this carpeted interior. Its design, furnishings and decorations have set a new tone for future building on the campus as well as proved that good architecture means a good investment.

Services which were nonexistent before are now taken for granted. There are few days in which the Seminar Room is not in use by student, faculty, and the Worcester Community. It is thought prestigious to hold a meeting in the Archives Room. Much interest is displayed at our exhibits on the third floor. On the other hand, disappointment is seen if the latest home town newspaper or popular periodical is not on the rack or if a certain record or tape is not available in the Music Room. It is hard sometimes to distinguish between one's

personal and professional attitudes to the library.

What does a library do? What is its function? Whom does it serve? In years past a library was a collection of books and periodicals, neatly housed on shelves with a few tables and chairs for the few people who ventured to read them. That concept has been greatly vitiated. Now one thinks of a library as a learning center where tools of the mind may be stored and utilized. Although hard cover books are still a major part of any library, one cannot ignore micro-form reader-printers, copiers, electronic calculators, music and other audio services, visual presentations through film and displays - individual and group study areas - even lounges in which to relax - all have become library functions. The library is changing and will continue to do so in the many years to come. Yet can we question this, for is not change an inherent component of growth? If we answer this in the affirmative, then we must realize that as the needs of our students, faculty and society modify or enlarge, we must in turn adapt to them. The importance of automation in the library's operations is just beginning to be studied in a serious manner so that more practical and financially acceptable programs may be designed for improving the dissemination of knowledge.

Recently, the Gordon Library has become the headquarters of the Massachusetts Technical Referral Center, a project supported by both federal and state funds. The Center is to provide



Professor Anderson

the Commonwealth's business, commerce and industry with useful referrals to appropriate technological information and expertise.

Technical reports which have become a major source of current engineering and technical data and research have often been ignored by most libraries. They are usually shelved in a back room without being cataloged and classified with the hope that no one will request them. Here again we are attempting to find ways to make such material more readily available for use by the undergraduate, graduate student, and faculty.

However fine the collection, a library's reputation has always been based upon the quality of its staff. Too many times an individual's contact with the staff is through the untrained clerical help at the Circulation Desk. Here again, I feel WPI has done well. Our staff is young, eager and intelligent so that one is not discouraged from asking for assistance. Part of the responsibilities and reward of a good staff is to feel it is sharing in the education of its patrons. It is most important from a morale point of view that the well-trained professional librarian be accorded the same respect as that which is given the faculty.

Formerly, environment was never really given much thought in library building. A table, chair, and suitable lighting were considered adequate for the "scholar". This idea, too, has been drastically changed, for libraries generally lead the academic campus in esthetic appearance. Air-conditioning, carpeting, luminous lighting, windows



Robert J. Goodness, '70, examines a display of architecture by Pier Luigi Nervi.

Students studying on the main floor of the Library.



with extended views, and upholstered furniture reflect some of the comforts of the modern times. Bright colors, textures, and variations of construction are as much a part of the environment as its circulation desk and book shelves. In other words, today's library is doing its thing in pleasant surroundings with a cheerful, competent staff who cares about its patrons. In recent years the library has been "trying a little harder".

Now one might ask, what are the future plans of the Gordon Library at WPI? I foresee much more cooperation and inter-use of the other academic and special libraries in Worcester, With the Worcester Consortium established and a group called the Worcester Area Cooperating Libraries much can be done to break down the barriers of the staid private college and its aloof view of the outside world. The exchange of students among the various campuses will bring about, at some future time, a library charging card that will be accepted at all institutions within the city. It will be the task of specific libraries to maintain book materials of certain disciplines. Here at WPI the areas on which we shall concentrate will certainly be those of engineering, certain sciences, and the history of science and technology. The various academic libraries taken as a whole will form a sort of unofficial University Library of Worcester.

Automation is a realistic goal as well as a practical one under this cooperative scheme. Central purchasing of books as well as central processing can be accomplished. This could lead to a union-catalog of holdings that is a complete listing of book materials for the entire city. You may ask, will this decrease efficiency of the Gordon Library's operation for WPI students? No, I believe it will be enhanced, for the student body will have at their disposal resources of greater depth and scope than ever before.

Another aspect of change will be the increased use of film loops, short

films explaining a specific function or period in our history. Here again the library will be housing numerous loops and readers — the concept of the picture book. Such loops, if carefully designed, can act as a supplement to classroom teaching.

With the great explosion of the printed word, many feel that a library building will be outgrown before it has been completed. I hope that the Gordon Library will be more than adequate to function into the next century. This can be accomplished through micro-storage of material. Hard cover books and bound periodicals consume space and cause the need for physical expansion. There is no reason that older and seldom used but nonetheless valuable periodicals cannot be placed on some sort of microform, reducing the storage required to the amount of 1/100 to 1/1000 of the existing area. With improved reading equipment and excellent printers for making full-sized copies, the student can read and retain the material needed for research. The library has received from NASA 100,000 technical reports on microfiche, requiring some eight file cabinets to house them. This vast mine of information would require an area 100' by 10' of shelving were it not for the microfiche.

Problem solving is also becoming another function that has been transferred to the library due to its long hours of service — averaging fifteen hours a day. The library contains the fantastic electronic calculator for solving mathematical equations and engineering problems. The one calculator which is in the library at present is no longer sufficient, for the demand is so widespread that we are being forced to consider additional ones.

The cultural area of education must be augmented; the music room is serving a viable purpose. It is a pleasure to hear a student comment that he enjoyed and appreciated other music than rock and roll. Yet whether it be classical, jazz, the blues or the now accepted rock and roll as personified by the Beatles, it is most important to expose students to all types.

The displays, both in the vestibule cases as well as those on the third floor walls, attempt to give a wide variance of the visual world. From the photo-

graphic exhibit of WPI's George E. Schmidt to the lithographs of Stow Wegenroth to the architectural design of Nervi — the student is exposed to an exciting artistic world. Japanese and Chinese porcelains and pottery as compared to fine printing provide still another diverse expression of our heritage.

I feel the Gordon Library continues to progress with the times and within it is serving the needs of its students and faculty. However, this does not mean we can be complacent. The greatest need and present lack of the library is an endowed fund in which money is readily available — where the new and unusual may be explored toward resolving a better education for our young people. With such a fund, apart from day to day operating expenditures, the library could be even a stronger innovator in its teaching role.

Thus, the modern academic library is no longer just a depository for the written word, but encompasses whatever tools and methods are required to be a learning center to stimulate the mind and prepare it for contributing to mankind.

ROTC at WPI—Very Much Alive

by COL. EDWARD J. GEANEY, JR.

Professor of Military Science

This fall, ROTC at Worcester Tech took on a new look. For the first time in its eighteen-year history, the program became entirely voluntary. Although this caused some drop in enrollment, the size of the WPI Cadet Corps remains quite respectable. Along with this, a few bold innovations in our course curriculum and in our approach to practical leadership development are helping to put new vitality into the program. All things considered, ROTC is very much alive on today's WPI campus, and the outlook for the future is optimistic.

Just what was the impact of the change to voluntary ROTC — in numbers? — in quality? Our major concern, of course, was the incoming freshman class which, as expected, was well over 600 students. During the summer we had written to all these prospective cadets, explaining the purpose of the Reserve Officers Training Corps and how the program could help to prepare them to fulfill their future military obligation as commissioned officers. We knew, however, that the real payoff would be on the strength of our appeal to these young men in

our personal contact with them at the start of the school year. This opportunity came in September when all the incoming male freshmen attended a mandatory 30-minute orientation on ROTC. This wasn't much time, we realized, but we were determined to make the best use of it. During this period we briefly exposed the new students to all the members of the military staff (six officers, five NCO's, and three civilians). We told them about the ROTC program in general and how it could benefit them. We discussed Selective Service, how they



Miss Nancy E. Woods, '73 of Gardner, Mass. is crowned queen of the Military Ball.

would be affected by it, and the options that were open to them to fulfill their military obligations; and we covered the highlights of the fouryear ROTC program that they could expect at WPI. After this 30-minute required orientation, the new freshmen then had the option of attending all or part of three additional orientation sessions before having to make up their minds whether to enroll. As it turned out, ROTC gained 130 of the 616 men presently in the freshman class. We had hoped to enroll about 200 of these men, but we feel that 130 is a respectable number and one that we can live with. With 50 sophomore cadets, 49 juniors, and 56 seniors in the program, this is a sizable decrease from last year's total enrollment of nearly 550. However, this is compensated by the fact that we now have cadets who are in ROTC because they want to be part of the program. By and large, we find that these men are better motivated, more enthusiastic, and a lot more responsive.

We on the military staff at WPI are alert and sensitive to the tremendous challenge that faces us today. We welcome this challenge, and I believe that we are facing it head on. After a long period of introspection from which we concluded that some of the criticisms being leveled at ROTC must be accepted as valid, we determined to try some innovations this year aimed at putting more vitality into the program, more intellectual content and stimulation in the courses, and more variety and interest in Leadership Laboratory.

What are some of the innovations we came up with? For one thing, we have revised the freshman year curriculum by relegating military skill subjects such as Weapons Proficiency, Map Reading, and First Aid, to Leadership Laboratory time, introducing subjects that have more thought content and which lend themselves to inquiry and discussion by the students. Realizing that the average freshman has a very limited under-

"SOME OF THE INNOVATIONS"

standing of the Army and the role of an officer, we are endeavoring to build for him some frame of reference by providing him a broad overall picture of the Army, the job it must perform, how it is organized and deployed around the world, and how it manages its resources. For example, we are conducting a short course known as Introduction to the Management of Military Resources which is oriented toward giving the cadet an appreciation of the magnitude of the resources for which the Army is responsible and some understanding of just what goes into the management of men, materials, and money. In another course, Leadership Fundamentals, we examine the role of the officer, what he is, what is expected of him, what an officer does, and how he relates to the non-commissioned officers and the men who serve under him. I don't mean to say that subjects like Weapons Proficiency and Map Reading are unimportant and should be ignored. Not at all. But the fact is that these are subjects which involve basic soldierly skills. They involve rote memorization of facts and statistical data, habit type of learning and very little conceptual understanding. We feel that the cadets can familiarize themselves with these subjects during Leadership Laboratory. Then in the more military atmosphere of ROTC summer camp, they can improve on their knowledge of and ability to perform these skills.

Let me say a word here about Leadership Laboratory. Some of you alumni who took ROTC at WPI will remember this as "Drill". The term Leadership Laboratory was adopted to emphasize that drill is not just a matter of marching for the sake of

marching but is an opportunity for practical leadership development of the cadets. Leadership Lab is presently conducted one day a week for an 80-minute period. For the freshmen and sophomore cadets, this involves about 12 attendances in the fall semester and equal time in the spring, adding up to a little over one 30-hour semester's work. This is the one period in the week when all the cadets can be together at one time and at one place and when the cadet battalion (we are too small to be a brigade any longer) can function as such. A certain amount of the time is taken up with marching per se, and this certainly has its place. The cadet officers and noncommissioned officers get the opportunity to perform in their respective roles. And the men in the ranks gain some feeling of pride and esprit that comes from teamwork, proficiency, and well-disciplined response to drill commands. However, realizing that this type of activity can become monotonous and boring when done to excess, we are endeavoring to limit the amount of time devoted to pure marching and ceremonies in favor of more varied activity that affords the maximum number of cadets an opportunity to exercise leadership in some form or other. Thus, by using part of Leadership Lab time to familiarize the freshmen with military skill subjects, we are varying the drill program for these men, at the same time giving more upperclassmen an opportunity to exercise leadership as instructors and assistant instructors.

We took another step this year in the direction of adding intellectual content to our curriculum and stimulating more student interest. This was the introduction of a course in General Psychology for the juniors. Here it goes without saying that an understanding of the mechanics of human behavior will help to make our WPI students not only better military leaders but better leaders in whatever profession or field they might take up. This particular course promoted a lot of discussion and interplay between instructor and cadet, and it was generally well-received.

For the seniors we have expanded our course in Leadership and Management and made it more sophisticated. This course treats leadership as a phenomenon of human behavior and draws on some prior knowledge of psychology. We go into leadership theory and offer the cadet a philosophy of leadership. We take up the functions of management and cause the cadets to teach themselves by actually planning, organizing, coordinating, and directing all aspects of an activity that will take place a few months hence. In another sub-course, we cover the human relations or group dynamics aspects of leadership by discussing senior-subordinate relationships, counseling, awards and punishments, etc. This course lends itself to maximum participation by the student through role plays, problem solving exercises, case studies, and seminar discussions. We are also endeavoring to enrich the course with guest lecturers. For example, we recently had Dr. Richard Juralewicz from the Management Engineering Department of WPI, who teaches courses in Social Psychology and Human Relations in Industry. He discussed with our cadets. some theories of leadership and various leadership styles that can be used. For February we have booked Mr. John J. McCarthy, a well-known management consultant to General Electric Company (he lectures at West Point as well), who will talk to both the juniors and seniors on "Executive Leadership".

Just how well we are doing in all this remains to be seen. While we are very enthusiastic about today's ROTC program at WPI, we are not static. In our experimentations for new and better ways, I do believe we are making a little progress. Most importantly, we continue to be our own worst critics.

To sum it all up, we in the Military Department feel that we are in partnership with the school and that we are complementing what the university does by contributing in some way to the total development of the "wholeman" here at WPI.

We might be smaller in size than we were in the past, but we are still going strong. Yes, indeed, ROTC is still very much alive on the WPI campus.



Worcester Tech ROTC dining-in at Fort Devens, Mass. in April, 1969.

A New Techniquest In 1970

by DR. RAYMOND R. HAGGLUND, '56

Associate Professor, Mechanical Engineering

"Did you have firm ideas about a career choice when you were a high school student?"

"What is the purpose of Techniquest?"

Techniquest is a one-week summer program for high school juniors who want to investigate engineering as a possible career choice.

The summer of 1970 marks the thirty-second program which is designed to expose the students to the general field of engineering and to college life. A change is being made in the program this year to provide the students with a more realistic and meaningful engineering experience. This will be accomplished by giving a significant engineering problem to teams of approximately 20 students. Each engineering team will be directed by a professor who will play the role of a chief engineer or manager. The team will be expected to arrive at a reasonable solution at the end of the one-week program.

This article will answer many questions about the program. After reading the article, you may find that you agree with the new idea. If so, you can be instrumental in helping high school students investigate engineering as a career by encouraging them to attend the Techniquest program. It is also possible for you, the alumni, to actively participate by providing engineering projects and/or case studies.

"What exposure to college life and engineering does the program give to the student?"

The program can be divided into six major areas, namely:

- 1. Engineering Problem Experience
- 2. Aptitude Testing
- 3. College Lectures
- 4. Evening Seminars
- 5. Dormitory Life
- 6. Industrial Tours

The "new" and "old" Techniquests have the same major areas. The major difference in the programs, however, is in the Engineering Problem Experience, and a more detailed explanation will be provided for this area.

1. Engineering Problem Experience

In the "old" Techniquest, groups of approximately ten students would visit all engineering and science departments and would participate in a 45-minute work experience. This experience generally consisted of a lecture, an experiment, a discussion of results, and a quiz with a recorded grade. This meant that the students were rushed through many unrelated experiences. Of course, the students saw many interesting phenomena, but they did not actively participate in defining the problem or planning the solution and/or the experiment. It is safe to say that the students did not become exposed to engineering by today's standards. In addition, the recorded grades for each work experience were accumulated and averaged and were supposed to indicate the students' ability to do engineering work.

The "new" Techniquest is different because the students play an active role as part of a working engineering team. A problem will be assigned to a team of 20 students by the professor-manager. The professor will introduce the students to a logical design thought process which is used in engineering to solve problems from a systems point of view.

The logical thought process incorporates the entire design cycle from problem definition to solution. It will be up to the students to define the problem in simple, understandable terms; to recognize the need for specialized information; to make assumptions; to create ideas and plans for solving the problem; and to choose one plan which will lead to a reasonable answer at the end of one week.

Hopefully, the students will experience the joys and frustrations that an engineer learns to live with when solving problems employing a similar design cycle. This experience should give the student more food for thought when considering engineering as a profession.

This project learning approach represents a new way of teaching for many faculty and is undoubtedly a new experience for the students. Some of the students will

experience the difficulties of managing a section, and all of the students will experience the sociological problems often encountered in group endeavors.

The professor-manager will play an important role. He will have to direct the students, but not lecture to them. Each group of 20 students will be broken down into smaller groups of three members, and one student will be appointed section head. The section head will have the responsibility of directing the total section effort. It will be necessary for the professor-manager to monitor each section and to keep all of his sections related and working toward their common goal.

Each of the professor-managers will assign a different project. Idealistically, the projects should be interdisciplinary in nature so that the engineering teams will be exposed to a variety of areas in engineering, science, and the humanities. In actual practice, however, it is difficult to cover all of these fields. It is felt that this is not important; rather, it is more important for the students to be introduced to the engineering way of thinking common to all engineering departments.

Throughout this plan, engineering has been emphasized over science. It is meant to be that way. It is felt that the students have a fairly clear understanding of science and what a scientist does from their high school courses, but that they have a very vague understanding of engineering and what an engineer does. Hence, the emphasis is on engineering.

2. Aptitude Testing

At the end of the week, the students should have some idea of their interests and their ability in engineering. In addition, aptitude testing will also be provided by educational testing personnel from Clark University to provide another measure of ability and aptitude. Also, the professor-managers will provide qualitative information relative to the students' interests and engineering ability. At the end of the week, all three parties — the student, the educational tester, and the professor-manager — will make a qualitative judgment for the student relative to engineering as his career choice. This will be done for each student.

3. College Lectures

Obviously, the students will not have the background knowledge to solve the engineering problem. They should, however, recognize the need for specialized information. Furthermore, they can define their specific needs. Some information will be provided by showing the students how to use the library effectively. In addition, lectures will be given by a staff of professor-consultants in such fields as physics and chemistry. In this way, the student will experience the total learning environment.

4. Evening Seminars

The evening hours will be more relaxed. Each evening will be devoted to a special topic, such as digital computers,

their application to engineering, and a limited amount of programming; analog computers; the role of the humanities in engineering; panel discussions on the various employment opportunities in engineering, such as research, design, sales, etc., and how to select a college and a particular field of engineering. These are only a few examples of possible topics for discussion.

5. Dormitory Life

For most students, this will be their first experience living in a dormitory environment. In any case, they will sample the present college dormitory life.

6. Industrial Tours

At the end of the week, the students will tour a local industry. This will give them a chance to see an industrial environment and to see how an engineer applies his education. It will also be an opportunity to view manufacturing processes which are a direct product of engineering.

"Aren't we expecting too much from high school students?"

The "new" Techniquest is designed after the WPI freshman course, ES-102 (Introduction to Engineering). My personal experience with the course shows that the freshmen are capable of arriving at solutions to problems. The solutions are not optimum, but they are acceptable. It is more important for the student to learn the engineering way of thinking than to obtain the "best" solution. Hence, learning to think, gathering information, and making decisions are considered most important. Surprisingly, the freshmen can do it very well.

"Can you give an example of a typical project?"

The following project is proposed for one of the projects. It was used in ES-102 in the fall term of 1969 and could be scheduled for Techniquest.

Problem: To determine the effectiveness of automobile radiator additives, such as Kwick Kool and Prestone, in preventing engine overheating.

Explanation: The students are not given any of this information. It is presented here only to show the depth of involvement of a typical project.

The project is experimental in nature and requires detailed thinking and understanding. It uses concepts and theories from thermodynamics such as temperature, heat, boiling point, specific heat and energy. In addition, the project shows the difference between scientific experiments designed to get a quantity like specific heat as compared to an engineering test using an automobile engine to measure the cooling effectiveness of the additives. The project also shows the difficulty in obtaining good experimental data. Support faculty from physics, chemistry, and mechanical engineering are required. The project is loaded with joy and frustration.

Tentative Schedule for Techniquest

The following schedule is an example only and is tentative. Sports events and socials are not shown but will be included.

Sunday Students arrive. Orientation. Aptitude testing begins.

Monday Student groups of 20 are formed and subdivided into sections of three. Professor presents design cycle and problem. Students define problem and are introduced to the library. Thermodynamics needed are defined.

Evening: Introduction to digital computers.

Tuesday Lecture by physics professor covering concepts of temperature, heat, specific heat, energy, etc. Students apply knowledge to problem. Professor guides students to think in terms of experiments. Students observe experiments to determine specific heat, boiling point, and temperature measurement in an automobile engine.

Evening: Introduction to analog and hybrid computers.

Wednesday Lecture by chemistry professor on determining ingredients of additives and importance to problem. Student sections of three perform experiments to measure boiling point, specific heat, and test engine in round-robin style.

Evening: Panel discussion on role of the humanities and social sciences in engineering education.

Thursday Student sections plot data; draw conclusions; make decisions; and write a brief report. The project is finished Thursday noon. Aptitude testing continues.

Evening: Panel discussion on the fields of engineering, engineering positions in industry, and how to select a college.

Friday Industrial Tours

Saturday Each student meets with educational testing personnel and his professormanager to make a judgment on engineering as a possible career choice for the student. Students leave WPI.

"Do you, the alumni, agree with the program?"

If you agree, then sell the program. Inquiries may be made to Dean William F. Trask at Worcester Polytechnic Institute. Deadline for applications is April 1.





We are a group of alumni and friends formed to assist WPI Athletics.

Our accomplishments to date have been:

Tutorial support to all student athletes desiring it. • Referral of student athletes to WPI. • Publication of a very well-received brochure—"Sports in Perspective"—(copies are available). • Seasonal mailings of athletic Newsletters. • Social gatherings at the various athletic events.

Solid growth has been experienced—(membership has doubled itself each year—over 150 members now).

1st year - 1967-68 74 members 2nd year - 1968-69 150 members 3rd year - 1969-70 Progress ahead of last year

WOULD YOU LIKE TO JOIN?

THE POLY CLUB

Sign me up as	a member of THE POLY CLUB. Dues enclosed.	
	_ \$25.00 Sustaining Member (Includes Season Pass to all WPI home games, all sports)	
	\$10.00 Participating Member	
Name	Class	
Address		
	(Bill me later as indicated above)	

Leo S. Jansson Award

February 1, 1970

Dear "Techman":

Recently Worcester Tech lost one of its most wellknown and well-liked personalities, Leo Jansson. Leo died on September 15, 1969, after having spent the previous three months at the Fort Devens Army Hospital.

The following editorial appeared in the September 16th issue of the Tech News:

"HIYA, KID, HOW'S IT GOING?"

He was our man, sincere, dedicated; he cared so much about so many athletes. So often he worked twelve hours and more, advising, healing, and caring for his boys. . . his experienced hands banishing pain, daring it to return. Work? No. . . life.

He helped with your problems, but never had any of his own. His time was yours - his friendship forever. His friends were his life, and his life he loved.

And he is. . . a departed friend.

To honor the memory of Leo Jansson, we are implementing an annual award, to be known as the Leo S. Jansson Memorial Award, to be "awarded to the sophomore who best exemplifies the WPI Athlete", as described by the plaque, "The WPI Athlete", found in the varsity locker room. This plaque specifies the true WPI athlete as exhibiting high personal standards of physical, moral, and social behavior; as being a gentleman athlete; as possessing courage, devotion, and a desire to achieve excellence. The selection of the recipient will be made by the coaching staff of WPI.

A permanent plaque will be placed in the lobby of Harrington Auditorium bearing the names of the annual recipients. Each year the awardee will receive a scholarship amounting to the interest received on the principal in the fund. Presentation of the award will be made at the Spring Honors Convocation.

In order to establish a fund for this award, we are asking alumni and those currently enrolled at Worcester Tech, as well as faculty and administration, to make donations to the Leo S. Jansson Memorial Award Fund, c/o Fred Broad, Development Office, Worcester Polytechnic Institute.

Your generous support will assure that all future members of the Tech community are aware of Leo's unselfish dedication to the men who made his life worthwhile.

Sincerely,

William J. Hakkmen

William J. Hakkinen, '70

James G. Hannoosh, '70

ALUMNI FUND PROGRESS REPORT

After only four months have passed in this year's Annual Alumni Fund program, a total of \$71,560.31 has been contributed by loyal alumni. In addition, a sum of \$6,306.25 has been contributed by corporations who have matching gift programs, thus making the total of the two programs \$77,866.56 as of December 31, 1969. Last year on the same date the total was \$71,100.52. This year only the general mail solicitation has been conducted so far and the personal solicitation will not be conducted until about March 1, 1970. Thus a comparison of results by years is somewhat misleading, but it does seem to indicate a trend which should produce a record contribution of funds.

The Fund Board adopted an optimistic goal this year of having at least 50% of all alumni contribute to the Fund. Last year only 34% participated during the entire program. To date this year 20% have contributed to the Fund as compared to only 15% at the corresponding time a year ago, and thus it appears that the goal of 50% participation will at least be approached.

"Many thanks to all of the loyal alumni who have so willingly contributed generously this year and in past years. WPI needs more assistance from more alumni. I am sure that more than 50% want to help WPI." So states Irving James Donahue, Jr., '44, Alumni Fund Board Chairman.

LAST YEAR'S LEADERS

TOP THREE DISTRICTS

BY PERCENTAGE OF PARTICIPATION

TOP THREE FUND KEYMEN

- 1. Donald H. McNamara, '55 Pittsburgh
- 2. Otto A. Wahlrab, '54 Rhode Island
- 3. David A. Pratt, '56 . . Cleveland

TOP FIVE CLASSES

BY PERCENTAGE OF PARTICIPATION

1. 1919				79%
2. 1915				73%
3. 1929				53%
4. 1945				52%
5. 1907				52%

. DISTRICT SUMMARY December 31, 1969										
	· ·									
Chapter	Chapter Rank by % Participation	∦ in Chapter	∦ of Gifts or Pledges	% Participation	Total Dollars	Average Gift	Average Gift Rank			
Pittsburgh Northern California Cleveland Rochester-Genesee	1 2 3	91 140 98 104	30 · 40 27 29	33 % 29 % 28 % 28 %	\$ 1,180.00 1,685.00 912.00 991.13	\$39.30 42.10 33.80 34.20	(9) (6) (16) (15)			
Southeastern	5	95	26	27 %	912.50	35.10	(13)			
Detroit Northern New Jersey Boston Rhode Island North Shore	6 7 8 10	75 441 801 262 297	19 104 188 60 66	25 % 24 % 23 % 23 % 22 %	611.00 6,022.95 6,205.00 1,714.00 2,195.15	32.20 57.90 33.00 28.60 33.30	(20) (1) (18) (21) (17)			
Connecticut Valley Hartford New Haven Chicago Los Angeles	11	350 612 419 105 216	71 120 83 20 42	20 % 20 % 20 % 19 % 19 %	2,438.00 4,534.00 3,027.00 970.00 1,762.38	34.30 37.80 36.50 48.50 42.00	(14) (10) (12) (3) (7)			
Washington Western New York Worcester Hudson-Mohawk New York	19	370 75 1,324 135 542	71 14 257 24 95	19 % 19 % 19 % 18 % 18 %	1,877.00 397.00 11,835.79 565.00 4,037.00	26.40 28.40 46.10 23.50 42.50	(24) (22) (4) (25) (5)			
Philadelphia Central New York Pacific Northwest Berkshire Wilmington	22 23 24 25	353 107 37 68 149	64 18 6 10 18	18 % 17 % 16 % 15 % 12 %	2,095.00 660.00 315.00 280.00 740.00	32.70 36.70 52.60 28.00 41.10	(19) (11) (2) (23) (8)			
Cincinnati Out of District Others and Honorary	26 — —	50 1,813 —	4 275 9	8 % _ _	70.00 11,990.41 1,538.00	17.50 43.60	(26) — —			
Totals Matching Gifts GRAND TOTAL		9,129	1,790	20%	\$71,560.31 6,306.25 \$77,866.56	\$40.00				

Tax and Transfer Problems in the Gift of Securities

by
FRED L. BROAD, JR.
WPI Director of Development

We have just come through that season of the year when Americans go on their annual philanthropic spree. Those last few weeks of the year when, as December 31st approaches, we are reminded most forcefully that if we want to give some money away Uncle Sam will pick up part of the tab. Which is another way of saying: When anyone considers his taxes, gifts sometimes help the giver, too.

It has often been said that, "Americans like to give," and this is certainly true as all our private educational and charitable institutions bear witness. But to procrastinate is human and this is why as the year end approaches we go scurrying around in our safe deposit boxes to find some stock certificates that can be used for this purpose. It seems appropriate therefore, at this time when all this is fresh in our minds, for us to take a look at this whole matter of supporting your Alma Mater by gifts of securities. There are many things about this that one ought to know and that he seldom has time to find out in the last minute rush to beat the tax deadline.

Worcester Polytechnic Institute and the Alumni Association welcome gifts of securities. Use of this method is often one of the simplest and best ways one may make a gift to the college. The college or the Association may either add these securities to their investment portfolios or sell them for their current market value. In either case, such gifts are advantageous to both the college and the donor.

As this is being written, the new tax reform legislation is still pending in

Washington. The outcome of this may have an effect on the allowable deduction for gifts of appreciated securities, but, in general, in making gifts of securities, one should always use those that have appreciated in value. There are two reasons for this. First, the full current market value is both the value of the gift to the college, and to the donor in determining the size of his gift and his eligible tax deduction, even though his original cost may have been substantially less. Second, the donor incurs no capital gains tax liability even though he gets a tax deduction for the full current market value of the gift. (Unless this too, is changed by the new legislation.)

Securities that have depreciated in value should not be used for gifts. The value of such a gift for tax purposes is still its current market value. If a donor has depreciated securities that he wishes to dispose of in connection with a gift, he should sell the securities, claim his tax loss, and use the cash for the gift.

Now how does one go about making a gift of securities? Depending on the particular circumstances, there are several things to consider.

- If you have a certificate for the exact number of shares you wish to give: Simply endorse this over to the college or the Association (see information following on how this is done) and deliver the certificate to Worcester Tech, either in person, by messenger, or by mail.
 - Endorsement may be handled in several ways:
- You may complete the endorsement to the college according to the instructions below. If this is

- done, certified mail is recommended.
- b. You may leave the certificate blank and send a signed stock power. If this is done, they should be mailed separately.
- c. You may sign the certificate in blank. If this is done, registered mail should be used.
- If you wish to divide the number of shares on the certificate you have: It will be necessary for you to have this done through a broker.
 - a. Inform your broker of the number of shares you wish to use for your gift and the number you wish to retain. Do not tell the broker how to dispose of the shares in the gift. Instruct him to contact Worcester Polytechnic Institute or the Alumni Association immediately for directions from the college regarding the disposition of the securities to be contributed. Notify the college of your gift and of the name of the broker who is handling the transfer. If this procedure is not followed, there will be an extended delay in establishing the effective date of the gift which may substantially alter the amount of your tax deduction, and may, if the gift is made near the end of the year, result in the gift not being eligible for a deduction in the year in which you intended.*
 - b. Do not tell your broker to sell securities and send the check to Worcester Tech: If you do so, you will be liable for a capital gains tax on any appreciation over your original cost.

- 3. Proper Endorsement: Do not personally endorse, or have a broker transfer securities to "Worcester Polytechnic Institute" or to "The WPI Alumni Association." The investments of both the college and the Association are managed and held in Trust by the Worcester County National Bank. So that the bank can keep the Trust accounts separate from the bank's own corporate accounts, a nominee account called Morrill & Co. has been set up. Morrill & Co. is, therefore, an agency name for the college and the Association funds which are invested in the Trust. All transfers of securities should be to "Morrill & Co." This will save the college considerable time and expense and will in no way affect the eligibility of the gift for a tax deduction.
- 4. If you wish, you may make a gift of only the appreciated value of the securities over your original cost by so notifying the college. In such cases the transfers are handled in the same manner as above, and the college will return to the donor a check in the amount of his original cost. The value of such a gift is then the difference between the current market value and the original cost to the donor.

So much for the mechanics of making a gift. Now if you have decided to make a gift of securities, or if during the past year you have made a gift of securities, the next question will be how you determine your tax deduction. Remembering again that the new tax legislation may alter the amount of the gift that is eligible for your deduction, there are several things to consider in establishing the value of the gift itself.

The college is frequently asked by donors to inform them "how much the school received from the sale of their gift of securities so they can figure their income tax deduction." The following information is given as an attempt to clarify this problem.

- The determination of the amount of deduction for a charitable contribution is primarily the responsibility of the donor, but the recipient may help him determine the deductible amount
- WPI or the Alumni Association does not always sell securities received as gifts. Very often these stocks or bonds are retained in the investment portfolios.
- 3. The value of a gift of securities as a charitable contribution for tax purposes is the mean between the highest and lowest quoted selling prices (or the bid and asked prices for unlisted securities) on the effective date of the gift. The ultimate disposition of gifts of securities by the donee has no bearing on the donor's eligible deduction for the gift.
- 4. The effective date of the gift is determined by whichever one of the following conditions applies:
- a. If the certificate is mailed to WPI or one of its representatives (e.g., campaign solicitor, Trustee, officer, etc.), the effective date of the gift is the postmark on the envelope from the donor. This envelope will be returned to the donor.
- b. If the certificate is delivered personally or by messenger to WPI or one of its representatives (same as above), the effective date of the gift is the date of receipt by WPI or its representative.
- c. If the certificate is delivered to a broker who subsequently becomes an agent of WPI, the effective date of the gift is the date the broker becomes an agent of WPI.*
- d. If the certificate is delivered to a broker who continues to act as agent for the donor, for transfer

to WPI, the effective date of the gift is the date the transfer is completed on the books of the company. This is the date on the face of the certificate. This method will cause a delay of several weeks in establishing the effective date of the gift and thus is not recommended. This date must then be obtained from the college. If the gift is made near the end of the year, this may then cause the effective date of the gift to go into the following year and lose its eligibility for a tax deduction in the year in which the donor intended.*

Therefore, subject to the provisions of any new tax legislation that may alter the amount of the gift that may be deducted, a donor of a gift of securities may determine the amount of his tax deduction by first, establishing the effective date of his gift; second, consulting a listing of the prices of the stock for that day; and third, determining the mean between the high and low prices listed. This is the procedure followed in determining the figure listed on the acknowledgement of gifts of securities.

Naturally, there will always be some cases that do not seem to fit these procedures exactly. Either the Alumni Office or the WPI Development Office will always be pleased to assist you if you have further questions. Please do not hesitate to call us. The above information is also available in a small folder titled *Gifts of Securities*. We will be happy to send you one upon request.

*When gifts are made through a broker, or other transfer agent, it should be noted that the broker cannot become an agent of Worcester Polytechnic Institute upon the instructions of the donor alone. The donor cannot deputize his broker to become the agent of the college. Worcester Polytechnic Institute must itself designate the broker to act on its behalf. This should be done in writing and before the donor transfers the securities to his broker.

YOUR ALUMNI OFFICE

The Alumni Association was formed in 1873 by the first three classes to serve the college by developing loyalty among the alumni. It was incorporated in 1891 under the laws of the State of Massachusetts. The total membership to date is 9,338.

The governing body of the Association is the Alumni Council, which is comprised of the Executive Committee of the Association and representatives from each of the 26 organized chapters around the country. The Alumni Office is located on the second floor of Boynton Hall, and this is where all alumni records are maintained and all Alumni Association activities are coordinated.

The Alumni Office is composed of three divisions: The Annual Alumni Fund, WPI JOURNAL and Records.

THE OFFICE MANAGER

The Office Manager is responsible for overseeing all of the office operations. She must keep operating procedures current, and she is responsible for the office being operated at optimum efficiency. As the college changes and alumni needs change, the office procedures are reviewed and changed accordingly. A yearly calendar of activities and operations is drawn up and followed as closely as possible. In addition, the Office Manager is responsible for all financial reports and accounting and assists in budget planning. She works closely with the Alumni Secretary-Treasurer and his Assistant in the yearly operations and acts as secretary in confidential matters.



Miss Norma F. Larson Assistant to the Alumni Secretary Office Manager



From left to right, Helen Winter, Nance Thompson, and Stephanie Beland transfer alumni records to computer forms.

RECORD KEEPING CHAPTER ACTIVITIES ANNUAL FUND THE JOURNAL REUNIONS HOMECOMING

TECHNI-FORUM



Mrs. Stephanie A. Beland Fund Secretary

THE FUND SECRETARY

The Fund Secretary is responsible for maintaining all records for each Annual Alumni Fund. This includes recording all gifts and pledges, sending pledge reminders, and acknowledging the receipt of gifts. She must also provide for four mail solicitations and the personal solicitation segment of the Annual Fund which functions from September to June 30. Several types of reports are made up semimonthly carrying statistics of giving within the chapters, classes, and showing amounts of gifts and comparisons to the previous year's giving. During the personal solicitation phase of the fund drive, reports are sent every two weeks to the fund workers, and the workers are also notified of alumni giving of the alumni solicited.

THE MAGAZINE SECRETARY

Communication is a most important phase of any alumni organization. The WPI JOURNAL is published four times a year and is sent to all alumni, other colleges throughout the country, and WPI campus personnel. It is also available to students. The magazine carries articles which are intended to keep the alumni informed about campus activities. All articles, with the exception of some feature articles, are written by the staff.



Miss Nance C. Thompson Magazine Secretary

A major function of an alumni magazine is to carry alumni news. The chief sources of this news are newspaper clippings which are sent to us by a New England clipping service, Alumni Fund pledge cards which invite alumni to use the reverse side of the

cards for personal news, and notes and letters from alumni. These are first processed by the Records Secretary for any address or business changes and then given to the Magazine Secretary for writing of classnotes.

We learn of deceased alumni not only through our clipping service, but also from mail returned by the post office or communications from relatives and friends (frequently alumni) of the deceased. Short obituaries are written, and several copies of the issue containing the "In Memory" are sent to the survivors.



Mrs. Helen J. Winter Records Secretary

THE RECORDS SECRETARY

The office receives over 2,000 address changes a year. Changes may involve a complete change of chapter affiliation and new business, while others are changes within the chapter. Various files are maintained on each alumnus: by class, alphabetically, the town in which he resides and works, and also by the company where he is employed. Chapter secretaries are periodically notified of changes concerning their chapter membership.

In addition to the three main divisions, the office also serves many other functions.

YOUR HELP IS NEEDED!

PLEASE KEEP
YOUR ALUMNI
ASSOCIATION
INFORMED OF
YOUR ACTIVITIES

Well over 150,000 pieces of mail are sent from the office annually. This includes the Fund mailings, announcements of class reunions and alumni chapter meetings, the JOURNAL, council announcements, and miscellaneous class letters. In addition, the office prepares all of the copy for Fund literature and Homecoming and Reunion brochures.

In 1970 a special project will involve the preparation of an alumni register. This register, which is updated, printed, and distributed periodically, basically includes a geographical listing, an alphabetical listing, and a class listing of all WPI alumni. The class listing includes degree departments, and business and residence addresses. This operation has required the addition of up to 12 part-time people in the past, but this year for the first time it will be prepared from our computer records system. Each alumnus will receive a copy of the register.

Techni-Forum, the program sponsored by the Alumni Association whereby High School guidance personnel are invited to the campus for one and one-half days, primarily to see what an engineering and science college is like and most particularly what WPI is like, is entirely organized and supported by the Association. This program enables the guidance personnel to come in direct contact with faculty and students and also to see the WPI campus firsthand. Over the years many guidance directors have directed topnotch students to WPI as a result of this program. There is a great amount of time and effort involved in making this program the success it is. The office must help select the guidance directors to be invited and must utilize alumni to make personal contact with them. All arrangements are made here from planning an interesting and informative program to making travel and hotel reservations. A number of records are maintained for this program, including the schools represented and guidance directors in attendance, prospective schools and guidance directors for future programs, and the geographic distribution of those who have attended.

In the fall, the Alumni Association sponsors the Annual Leadership Conference. Alumni volunteers are invited to this program on campus for discussions and an exchange of ideas with the faculty, students, administration, and their fellow alumni. They reacquaint themselves with the campus and learn what is expected of them as alumni leaders. Both Techni-Forum and the Leadership Conference include panel sessions with faculty, students, administration, and alumni.

Another major event of the year which occurs in the fall is Homecoming. Each year Homecoming reminders must be mailed to all of the alumni and the activities must be planned and coordinated for Homecoming Saturday. This includes registration, the popular tailgate picnic and barbeque, the judging of the fraternity displays, and a social hour following the football game.

Communication is maintained regularly with classes scheduled for reunion, aiding them as much as they require. Class reunion letters are mailed from the Alumni Office throughout the year and the general Reunion held on the Saturday preceding commencement is arranged during the spring. At each Reunion luncheon the Robert H. Goddard Award for professional achievement and the Herbert F. Taylor award for service to the Institute are presented to alumni.

As mentioned earlier, it is the responsibility of the office to communicate to the alumni the needs of their college, and to communicate to the college the alumni point of view. This is done through the JOURNAL and also through the 26 organized alumni chapters. The chapters are the grass roots of the Association and are the source of its manpower. The chapters hold from one to four meetings per year. Many chapters request a specific individual as a speaker, others will ask for suggestions, but usually at least one meeting every year is attended by a speaker from the campus. This year Dr. Hazzard will visit most of the chapters. Because of changing population patterns, the chapters are constantly being realigned to maintain the best possible communications and operations.

In addition to chapter meetings, it is planned to send a periodic newsletter to all alumni chapter officers keeping them abreast with the Institute and of what their Association is doing.

Accurate record keeping is essential and must be kept current. There are times when the office is nearly overwhelmed and the days are not long enough. In addition to the records mentioned earlier, there must be listed all chapter officers, Association officers, committee members, and biographical data on each alumnus for the Taylor and Goddard awards and honorary degrees. The records kept provide a great service to the Institute as well as alumni. Hopefully, converting to the computer will alleviate many man hours spent on details of record keeping, and time may be spent to better advantage for the alumni and the Institute.

21st ANNUAL TECHNI-FORUM ATTENDED BY 22 SECONDARY SCHOOL GUIDANCE COUNSELORS

The Twenty-First Annual Techni-Forum was held on campus on November 6 and 7. Attended by 22 secondary school guidance counselors and administrators, this ever-popular program sponsored by the Alumni Association was extremely well received by everyone. The goal for Techni-Forum as stated by President Hazzard in a letter to those attending was "to bring together secondary school and college educators for the discussion of matters concerning both the secondary school and the science and engineering college and to afford an opportunity...to examine our facilities." Everyone agreed that this was amply accomplished.

Bradford W. Ordway, '39, Chairman of the Techni-Forum Committee, presided at the opening session in Olin Hall and welcomed everyone to Techni-Forum. He then introduced Dean M. Lawrence Price, '30, Vice President of the college and Dean of the Faculty. Noting that the direction and breadth of the total education program at Tech has changed rapidly in recent years, he stated that new courses and degree programs, along with the Worcester Consortium, now allow Tech to attract a larger number of students. He was careful to point out, however, that the size of Tech is not expected to increase beyond 2,000 undergraduates.

Following Dean Price was Dr. Allan E. Parker, Professor of Physics and Head of the Department, who explained the high school preparation which is expected of each entering

freshman. He emphasized a firm background in english as well as physics, chemistry, and math, and he spoke briefly about the Physics Dept. The distinction between a scientist and an engineer was then explained by Dr. Alvin H. Weiss, Associate Professor of Chemical Engineering. He pointed out that they overlap more than most people realize and that today the humanistic aspect of each is more important than ever.

After a tour of Harrington Auditorium, the George C. Gordon Library, and the Worcester Area College Computation Center, Professors Higgin-bottom, '25, Johnson, and Onorato explained the major and minor programs of business, economics, humanities and technology, and the courses associated with each.

At the noon luncheon in Morgan Hall, Dr. Hazzard described what he calls the "technological humanist," a person who can not only cope with the problems of science and engineering, but also with humanistic or social values. He spoke of our Two Towers plan and the hope and desire that we will be employing more of a project orientation to our program of studies in hopes of better educating our students so they may better encounter today's — and tomorrow's — problems.

After lunch, professors Van Alstyne, Richardson, Schwieger, and Zwiep discussed their respective departments and programs. It was noted that there is much interaction between the departments of math, electrical

engineering, management engineering, and mechanical engineering. This discussion was followed by a talk by William F. Elliott, '66, Assistant Director of Admissions, on the newly-inaugurated Admissions Counselors program, whereby alumni visit students in high schools. Edgar F. Heselbarth, Director of Financial Aid, spoke on the various types and amounts of money available to students as aid, and Kenneth A. Nourse, Associate Dean of Student Affairs and Director of Admissions, concluded the session by speaking about WPI's general admissions policies.

A panel of undergraduates, Miss Lesley E. Small, '72, Leonard Polizzotto, '70, and Paul E. Evans, '71, then answered questions from the guidance personnel in what was possibly the most popular program of the day. Subjects of particular interest were the advisor system, the ease of transition from high school to college, and why the students chose to attend WPI.

The evening session consisted of talks by Dean Martin C. Van de Visse, Dean of Student Affairs, Merl M. Norcross, Associate Professor of Physical Education and Athletics, and Edward J. Geaney, Colonel, U.S.A., Professor of Military Science and Head of the Department.

Friday's schedule began with talks by Carl H. Koontz, Professor of Civil Engineering and Head of the Department, and Robert C. Plumb, Professor of Chemistry and Head of the Department. This was followed by a tour of Goddard Hall and Alden Research Laboratories and a concluding lunch-

Those who attended, whether from near or far, were impressed by the quantity and quality of the programs and facilities which WPI has to offer. They had gained a clear insight into the distinction between science and engineering, the flexibility of our programs, and the value of the Worcester Consortium. But probably most important, they were impressed by the hospitable, family atmosphere which is so much a part of an education at Tech.

Those secondary school personnel attending were:

Mr. Melvin Ginsberg Bristol Central High School Bristol, Connecticut

Mr. Edward F. O'Neill St. Bernards High School New London, Connecticut

Mr. Lee E. Pyne Windham High School Willimantic, Connecticut

Mr. Heaman H. Stevens Windham High School Willimantic, Connecticut Mr. Arthur Pepin Chicopee High School Chicopee, Massachusetts

Mr. George DeFlorio Chicopee Comprehensive High School Chicopee Falls, Massachusetts

Mr. Howard Groom Wachusett Regional High School Holden, Massachusetts

Mr. Henry Miles Wachusett Regional High School Holden, Massachusetts

Mr. Kirby R. Thwing Longmeadow High School Longmeadow, Massachusetts

Mr. Arthur G. Sticklor Natick High School Natick, Massachusetts

Mrs. Jean H. Woodhead Algonquin Regional High School Northboro, Massachusetts

Mr. William Ellithorpe Palmer High School Palmer, Massachusetts

Mrs. Margaret Ziegler Palmer High School Palmer, Massachusetts Mr. James E. Sabin Cherry Hill High School East Cherry Hill, New Jersey

Mr. Scott H. Borchers Cherry Hill High School East Cherry Hill, New Jersey

Mr. Walter Knittel Raritan Township High School Hazlet, New Jersey

Mr. Leonard T. Neil Midland Park High School Midland Park, New Jersey

Mr. Howard I. Barnes Maine-Endwell High School Endwell, New York

Mr. Brian R. Walsh Shaker High School Latham, New York

Mr. Henry Payne New Rochelle High School New Rochelle, New York

Mrs. Nancy J. Lang Westhampton Beach High School Westhampton Beach, L.I., New York

Mr. Royce B. Radeline Yorktown High School Arlington, Virginia



A tour of the Worcester Area
College Computation Center was
a highlight of the campus tours.
Pictured here with Dr. Norman E. Sondak
(seated), head of the computer science
program, are: left to right,
Mrs. Jean Woodhead (Northboro, Mass.),
Mr. Howard Groom (Holden, Mass.)
and Mr. Henry Miles (Holden, Mass.)

A Faculty Viewpoint

by
ROGER R. BORDEN, MS '61
Associate Professor, Mechanical Engineering

The older generation often asks: "What is wrong with today's youth?" After 17 years of teaching and counseling, in post-secondary technical education. I feel somewhat competent to answer. Many, if not most, of the young men and women in high school and college this year are the finest, most intelligent, most knowledgeable, most mature, and most sensitive youngsters this country has ever produced. They are rightfully concerned and indignant about the state of affairs in this nation and in the world at the present time. They seem to have X-ray insight into the economic, political, and social problems that we now face. They are fed up with pretense, hypocrisy, false premises, and expediency.

The world that we oldsters (anyone 25 or older) were born into has gone. Accelerated technological growth and the population explosion have created startling contrasts in society. Air and water pollution, haphazard waste disposal, nuclear testing, the decaying inner-city, ill-planned and uncontrolled residential and industrial expansion into the rural suburbs, the rapidly increasing number of motor vehicles, the growing inadequacy of our highways and transportation systems, economic inflation and increasing foreign competition, demoralizing warfare, political expediency and graft, individualism, and materialism are examples of the questions that need immediate answers if our western civilization is to survive.

In the past twenty-five years we have passed through the nuclear age into the space age. We have walked on the moon; flown by Mars and Venus; created new electronic marvels; and conquered many human diseases, but we have made very little progress in

social science and the humanities. Colleges and secondary schools have emphasized science and technology at the expense of the courses which emphasize human understanding and values. Government, education, religion, and the other non-technical aspects of our society have fallen woefully behind in the race for superiority in science and technology. We are rapidly becoming masters of outer space, but we have yet to really explore man's inner space.

A large number of teenagers and young adults are at odds with their parents and other representatives of the "establishment". They wear unusual clothes and eyeglasses that are out of the style of the conservative, contemporary fashion. The boys and young men favor beards, mustaches, and long hair. This group does not want to be identified with the hypocritical older generation that merely gives political lip service to human values and ethics. They are also striving for identity in an expanding, impersonal world where human beings are fast becoming a number instead of a name.

We should all remember, however, that the younger generations in all eras of our history have been distinguished by their dress, taste in music, and method of dancing. Have you forgotten the raccoon coat, the "zoot"-suits, the "flappers", jazz, "boogie-woogie", ragtime, "speak-easies", bath-tub booze, etc.? "Let him who is without sin among you cast the first stone."

A generation gap most definitely exists — particularly in the area of communication. Most parents are conscientious enough to see that their children are fed and clothed, but often

that is as far as their interest extends. Teenagers with unanswered questions, personal problems, and a fundamental need to talk things over with their elders are frequently shut out by their fathers and mothers who cannot afford time, for their children, from their busy schedules. And then there is the growing problem of broken homes where there is a working mother or where the children are brought up by relatives.

Frustration and hopelessness are at the root of vandalism, juvenile delinquency, alcoholism, the drug abuse problem, and protest demonstrations. An impersonal, materialistic society with no apparent national purpose creates the atmosphere for lawlessness and despondency.

The time has come, according to our youthful leaders, for the citizens of the United States of America to recognize their shortcomings and to realize that you cannot solve the problems of the 1970's with puritanical or mid-Victorian techniques - particularly when these methods only apply to the other person. They say our nation is at the last fork in the road. Two paths are open to us. If we continue the way we are going, we will follow all previous empires into decadence and oblivion, but if we come to grips with our human natures, and realize that we are capable of the kind of human behavior that Jesus taught, we still have a chance to retain truly democratic world leadership.

The youth of today say, in conclusion, that if we are to have a future, then all of our people and their organizations have to be changed, particularly religion, Government, the church, and society must be brought up-to-date in order to cope with the problems of the space age. The principal change, they maintain, must be a change in the human heart. "Love Thy Neighbor", the Ten Commandments, and the Sermon on the Mount must be rediscovered and put to practical use.

In all honesty and objectivity, as you observe our nation and the world in 1970, don't you agree with them?

Undergraduate Viewpoint

by
DOMENIC J. FORCELLA, JR., '70
President, WPI Inter-Fraternity Council

The fraternity system at WPI is changing as rapidly as the school. During the last five years, changes on campus have produced, or at least helped to produce, many changes in the fraternities.

In the past, the WPI student was almost entirely dependent on the fraternity system to provide his social life. This led to the complete involvement of the students in fraternity life. and campus life suffered. Now the campus elects a social chairman and has an active assembly committee, so the fraternities no longer have to supply the students with the number of activities they did in the past. The idea of joining a fraternity because it's the only way to have any social life is obsolete. The fraternities continue to supply a portion of the social life on campus, but it is not as dominant a factor when a student is considering membership as it used to be.

The type of man joining a fraternity these days is also different. The old stereotype beer-drinking, girlchasing fraternity man is gone. Today's member has more opportunities than in the past to get involved in activities. This leads to a new conflict between the fraternity and the school, and it results, I feel, in a drop in school spirit.

Whenever a fraternity man does not show up for a school function, the fraternity is alleged to have stifled school spirit. A person's likes or dislikes are not taken into consideration, but rather the whole system is denounced. What many people fail to realize is that fraternities probably do more to take the name of the school to the public than any other school organization. The community projects carried on by the individual fraternities and by the Inter-Fraternity Council as a whole reach a large and diversified group of people. Yet these men who indulge in tutoring, big brother programs, aid to the underprivileged, city beautification work, hospital work, fund canvassing, and similar projects are said to be stifling WPI school spirit.

What the school community fails to realize is that the majority of campus leaders are the dorm counselors and that these people tend to be a little too idealistic. Most do not have a real feel for the campus pulse, and they cannot reach the fraternity man. Consequently, they do the next easiest

thing and berate him. This sort of misunderstanding tends to influence a person to direct his efforts towards his fraternity where he feels he will be appreciated. In the future, I hope, with the "do your own thing" attitude, people will see that fraternities do not influence a person to such a degree as to keep him away from campus life, but rather that each individual is free to do as he pleases.

The fraternity is still an integral part of college life today. Its assets have been brought more to light now that its social aspect is not a chief selling feature. The fact is that a fraternity is a cross-section of the campus, made up of all types of people and is not a stereotyped organization. Responsibility and leadership, which it imparts to its members, are probably its strongest assets.

With a membership of people looking for more than social life, the quality of fraternities is sure to improve. Some of these signs have already been seen. When community projects are completed, people don't remember the fraternities, but rather those "nice guys from WPI." The school now runs social functions on Saturday nights without worry of fraternity competition.

As more and more of the social program is assumed by the school, the fraternities can expand their activities and more readily adapt themselves to the changing times and attitudes. As the largest organizational body on campus, the fraternities can tackle large projects that even the Student Government may not wish to take on. The success and growth of the campus will be determined when all the student organizations realize that they are all working towards the same goal — the betterment of WPI.

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tunity for such involvement must exist for the student in his educational program. The educational institution must be committed to recognizing the need for and providing opportunity for such involvement with academic credit.

Whenever there is involvement of an educational institution with the outside world, the key to success is people. The right people in the institution must deal with the agency, or civic organization, or professional bureau head. Although one does not have to agree with it, he simply has to get along with the local power structure, and the emphasis must be on the demonstrated ability of a university person to be able to work with people. The usual ivory-tower professor does not generally qualify. The need is for people-oriented engineers, not engineering-oriented people. This is one important obstacle to involvement.

Traditionally, when an educational institution looks at a new problem, its first inclination is to research it. This is particularly true in the technical areas. It is a needed inclination, but it stands as an obstacle to involvement in the sense that over-emphasis on the research effort prevents involvement in the problem itself — a potentially much more meaningful undertaking. The research, publication reward system must be critically reviewed in this regard. This bears directly on the recruitment of faculty and staff. Commitment must be made (policy changes) to the end that the problem solver is recruited in equal status with instruction and research.

Unfortunately, there are compelling reasons why educational institutions are prone to point to research as an important vehicle for their contribution to the solution of problems associated with the urban crisis. Foundation grants and government assistance have traditionally been pointed in that direction. But for educational institutions simply to cite such projects, most of which may have little to do with real people and immediate human environmental problems and to seek, in this fashion, to convince themselves and society that they are doing their share, may be viewed quite properly in most cases, particularly in science and engineering, as begging the question. The real question is relevance to the problem today. Continuation of the above outlook can be viewed only as evidence of ignorance of what the problems are, and such ignorance provides little hope for success in attacking the problems.

Another obstacle is often encountered in the classroom itself. This is where students can begin to learn about real problems, to develop the ideas and convictions necessary to become urban problem solvers or simply good citizens. Somewhat facetiously, it might be commented that course structure, traditions, and curricula content teach students more about the problems of medieval days than about contemporary problems. Perhaps a real hard look needs to be taken at the value of personal cultural growth through certain humanities courses vs. that broadening outlook that

could be achieved through more emphasis on contemporary social problem-oriented coursework.

Two fundamental issues are inherent in all this. One has to do with instructional policy regarding urban problem solving and the other with financial support. These are inevitably linked to one another and must be the subject of intense study.

CIVIL ENGINEERING STUDY PLAN FOR WPI

For almost two years, the faculty of civil engineering at WPI has been involved in an intensive study of its curriculum with a view to revision in keeping with the philosophy, goals, and objectives described in preceding sections of this paper. In the initial stages of this study, the view was taken that, in education to meet properly the challenges posed in modern engineering problems, civil engineering practice and, consequently, civil engineering education could, for an individual, take a variety of directions and still be most meaningful insofar as the end product was concerned. Civil engineering is what civil engineers should be doing in this modern age. This latitude implied from such a general definition of civil engineering must, of course, be restricted from the point of view that there are traditional areas that are generally accepted as the province of the civil engineer. Fortunately, however, each of these areas is sufficiently broad in scope to permit distinct variations in traditional educational approaches where such variations are justified from the point of view of their potential value in contemporary problem solving.

First consideration was given to specification of the minimum required civil engineering course content in the undergraduate curriculum necessary to accomplish first professional degree status at the B.S. level in four years. This, in itself, was no easy undertaking and required considerable study and soul searching. It is always difficult to abandon traditional course offerings for a variety of reasons. The key philosophy here was that the curriculum should not be such as to provide something of everything for everybody. It is always easy to take the easy route and justify a course from the point of view that at some time the student might be encountered with a problem situation in a particular area and therefore must have some coursework in it. It is just as easy to adopt a philosophy, although it may at first be hard to realize, that most of the problems faced professionally are problems for which coursework in the formal educational process cannot be directly applied. If the student should learn anything at all, it is to learn to learn. That is the philosophy that should be imparted to students and the most important effect that teaching should produce. A properly constituted set of professionally and/or scientifically oriented formal courses can be minimized to accomplish certain immediate purposes while, at the same time, it prepares the student for continuing the learning process after his first degree whether formally or as a process of professional development.

Since all WPI students are required to complete a common first year of study, departmental control is exercised only within the three upper-class years. Of the total time available in those three years, the approximate equivalent of a full year of study is devoted to Institute requirements in the basic sciences and liberal studies. Thus, departmental dominion is restricted to the equivalent of two full years of academic work.

In the proposed civil engineering curriculum one year equivalent of study is devoted to a series of twelve required course study areas. The second equivalent full year of study is elective. No course in the three upper class years, required or elective, would be specifically listed in a particular year or semester.

Prior to the beginning of the sophomore year, students electing civil engineering would be individually assigned to an advisory board of faculty. Each student, in consultation with his board, would prepare a complete preliminary study plan for the upper three years. Such plan would be oriented to include all requirements and electives in the best order necessary to meet the planned objectives and interests of the student. The plan would be subject to change as the desired objectives and interests of the student may change for whatever reason.

The twelve required courses are designed to equip the student with the necessary fundamental body of knowledge underlying professional level studies in any area of the civil engineering discipline. Topical content is selective and integrated for immediate relevance. For example, statics and strength of materials would be integrated in a two-course sequence rather than as two separate courses. Such integration would also apply to analysis and design and to other suitable combinations of study areas. This would occur horizontally from semester to semester in sequence and vertically within any given semester. To the fullest extent possible the program of a student in any semester would be an integrated whole rather than a battery of separate, disjointed courses.

The flexibility inherent with twelve elective courses opens up all sorts of desirable avenues in the undergraduate curriculum. Opportunity exists for some degree of traditional specialization even at the B.S. level. This is not achieved at the expense of a well-balanced program, since the required course content provides that. Specialization must also be structured for many reasons, not the least of which is the matter of course proliferation and attendant adverse effects on the unit cost of education. Opportunity also exists for generalization either within or without the discipline or in various combinations. This provides for the student who has interdisciplinary inclinations, or for one who may simply wish to exercise an opportunity to shop around until he has established his own goals and objectives. Perhaps most significant is the opportunity to provide

parallel four and five year tracks. As early as the third year, a student might elect to spend a fifth year in quest of an M.S. degree. Such work could then be integrated through all remaining years, and, followed to conclusion, would result in the earning of an M.S. degree while still retaining terminal B.S. possibilities at the end of four.

Batteries of elective courses in the subsystems of transportation, environment, planning, and structures have been proposed at such levels as to permit simultaneous registration of advanced undergraduate and graduate students. This would tend to alleviate the all important aspect of adverse economy associated with small graduate classes.

The flexibility inherent in the new proposal affords vastly increased opportunity for project work. The program visualizes a continuation of what has been done before. For example, in structural design courses students have produced and will continue to produce complete designs of structural systems. Since flexibility now crosses all class years through the M.S., such projects can be of greater variety both in breadth and depth involving teams made up of all classes. They can, furthermore, be integrated. For example, a waste disposal system design can be integrated with an urban plan which would include structural and transportation systems, among others.

CONCLUSION

The new study plan proposed for civil engineering students at WPI embodies substantial departures from traditional concepts of engineering education. It is, however, only the beginning — a foundation which will permit other innovative and imaginative educational ventures as continued studies and experiences will, no doubt, indicate.

Apart from the educational advantages inherent in the plan, there is the all important consideration that it has been developed in complete conformance with the concepts of the system of engineering practice and education that has evolved naturally over many decades. This system has produced remarkable successes and no failures. There are unsolved problems. Failure is not in solution but is, in fact, failure of inaction. The simple fact is that those who operate and activate the system (not necessarily the engineer) sometimes operate out of phase with societal development. All that is required to solve most of the problems is to operate the system in step with concentration of expertise and other resources diverted to new directions.

The study plan for civil engineering inherently permits educational concentration within the natural system in conformance with current societal needs and with the capability for instant reorientation as such needs change. From this point of view, it is a model that depends for success only on the ability of students and faculty to recognize changing human values and adjust their directions accordingly.

DISTRICT DOINGS

Boston. For the fall meeting, the Boston Chapter invited the members of the North Shore Chapter to hear Dr. George W. Hazzard speak on the latest developments on the Hill. Over 50 alumni and wives turned out on October 28th at the Pillar House in Newton to greet Tech's new President. Dr. Hazzard's address was followed by a lively discussion of both future plans for WPI and the trends in higher education in general.

Robert D. Behn, '63 Secretary

Rochester-Genesee. Nineteen alumni and wives attended our first fall meeting at the new Flagship-Rochester Hotel on Monday, October 20, 1969. We were pleased to have as our quests Dr. George W. Hazzard, Tech's new President, accompanied by Mrs. Hazzard and Alumni Secretary Warren B. Zepp, '42. After a satisfying dinner of roast beef, Chaper President Bob Kostka, '63, introduced Dr. Hazzard, who gave a most informative talk on the present status of Worcester Tech and on future goals and direction of growth. He mentioned expected problems to be overcome in meeting the changing requirements of the times while still retaining its independent status as a small engineering school. Following the meeting, we all enjoyed talking informally with Dr. Hazzard and with Mrs. Hazzard.

Respectfully, Clayton E. Hunt, Jr., '34 Secretary-Treasurer

Washington, D.C. The fall meeting of the Washington, D.C. Chapter was held at Evans Farm Inn, McLean, Virginia, on November 18, 1969. It was our great pleasure to have Tech's new President, Dr. George W. Hazzard, Mrs. Hazzard, and Prof. Warren B. Zepp, '42, Alumni Secretary-Treasurer, as our guests. The meeting was attended by approximately 40 alumni and wives.

Dr. Hazzard was introduced by President Dan Brosnihan, '62. Dr. Hazzard spoke on a wide variety of interesting subjects, including his impressions of Worcester, Planning Day, admissions, and admissions counseling, to mention a few. The present thinking on the Hill in regards to the curriculum and the desired size of the student body was also discussed.

Prof. Zepp briefly discussed the current fund drive and admissions counseling.

Walter Bank, '46B, reported on the progress of admissions counseling efforts by the chapter.

> Dwight M. Cornell, '60 Secretary

Connecticut Valley. On November 20, 1969, the chapter embarked on its 1969-70 season with a meeting at the Lord Jeffery Inn in Amherst, Mass.

Chapter President Lou Stratton, '39, signified his desire to move some of the meetings to the fringe areas of the chapter in order to draw participation from alumni who would find the Springfield area impractical. This initial endeavor appeared to be successful, since there were a number of new faces among the thirty-four in attendance

Representing the "Hill" were Steve Hebert, '66, Assistant Alumni Secretary, and Mel Massucco, WPI's Head Football Coach.

Steve spoke briefly, introducing himself to the chapter, describing his new position and the changes in the Alumni Office as made possible by the advance of the computer age.

Mel Massucco, principal speaker of the evening, captured his audience with a very interesting commentary on athletics and physical fitness in general and football in particular as it applies to WPI. Mel's comment on recruiting possibilities left open to him, i.e., a football player with the proper S. A. T. scores, being in the upper third of his class, and having a desire for an engineering education, indicated to all present that Mel continues the dedication of his predecessors in the head coaching job at

Paul J. Brown, '50 Secretary

Pittsburgh. The fall Dinner Meeting of the 1969-70 season was held at the Sherwood East, Center Avenue, Pittsburgh, Pa., on Wednesday, November 19, 1969. In addition to our special guests, Dr. and Mrs. Hazzàrd, the newly inaugurated President of WPI and his wife, and Warren B. Zepp, '42, Alumni Secretary-Treasurer, 18 Pittsburgh Chapter members and 11 wives attended the meeting.

President Donald M. McNamara, '55, called the business portion of the meeting to order at 8:30 P.M. with a word of welcome to members and guests. Secretary-Treasurer Gedney B. Brown, '55, reported a balance of \$37.14 remaining in the treasury. He announced that dues notices for the year would be sent out in the next few weeks and that anybody could pay their dues (\$2.00) in advance if they desired to do so.

He also distributed copies of the newly revised 1969 Pittsburgh Chapter Directory to those present and requested that he be notified of any additions, corrections, or deletions so that an addendum could be issued sometime after the first of the year.

Warren Zepp briefly reviewed some of the recent and current Alumni Association activities, including the Techni-Forum and the Alumni Association Master Plan Program.

Following a word of welcome by Vice President Arthur D. Tripp, Jr., '36, our featured guest speaker, Dr. Hazzard, was introduced by Dr. William E. Hanson, '32, Chairman of the WPI Board of Trustees.

Dr. Hazzard began his talk with his impression of the status at WPI through stories of personal experiences on campus and with the students. He concluded from these stories that there was a "friendly spirit and an enterprising attitude" present on campus. He then went on to express his feelings on where WPI was going in the future which he felt reflected those of the faculty, board of trustees, and students. He indicated that WPI must maintain high quality, and at the same time, remain small with an estimated eventual enrollment of 2,000 students. He also stated that WPI must provide diversification as well as quality. He felt that the Consortium for Higher Education in Worcester permitted that diversification while allowing the individuality of the smaller schools to be retained. He stated that the future graduate must be a technological humanist, as many of the problems of society are people limited, not engineering limited. He then said that a program must be developed at WPI to match the present physical plant which implies a roll in the process by the alumni. Alumni participation, he felt, could be by helping to bring new students, understanding and interpreting the program, and passing on ideas about real life engineering and technical behavior and studies. This latter assistance could be in the form of case studies and projects that could be performed by the students. He also urged alumni financial aid which he felt that, with the 5-10% operating deficit at WPI, would be a large lever to a quality education. He concluded that WPI's quality, character, nature, and reputation depend greatly on its students and its alumni.

Dr. Hazzard received a standing ovation from the members present, which I am sure reflects the confidence and support the alumni will have for him in carrying out his work at Tech.

The meeting closed at approximately 9:30 P.M.

Gedney B. Brown, '55

Secretary-Treasurer

IN MEMORY

DeWitt Clinton Lambson, '02

DeWitt Clinton Lambson, '02, died in Meriden-Wallingford (Conn.) Hospital on December 5, 1969 after being ill for several months. He was 94.

Mr. Lambson was born on February 18, 1875 in Southwick, Mass. and attended Westfield (Mass.) High School prior to enrolling at WPI in 1898. He received his bachelor of science degree in mechanical engineering in 1902.

After graduation, Mr. Lambson was employed by the American Thread Co. of Holyoke, Mass., as an engineer. For the past 44 years, he had made his home in Meriden, Conn., where he was the owner and operator of Lambson Specialty Co.

He is survived by a daughter, Mrs. Ernest Moesel of S. Meriden; a sister, Mrs. John Ely of Granby, Conn.; and four grandchildren.

Fritz A. Hedberg, '07

Fritz A. Hedberg, '07, died on August 18, 1969, in Utica, N.Y., at the age of 83.

A native of Worcester, he entered Tech in 1903, was a member of Theta Chi Fraternity, and received his degree in electrical engineering in 1907.

Mr. Hedberg joined the Westinghouse Electrical Co. soon after graduation and held the position of manager of the Utica maintenance and repair department for many years. He retired in 1951. He was also a former member of the Oneida County Alcoholic Beverage Control Board, the Municipal Housing Authority, and a past president of the Yahnundasis Golf Club. He was also a member of the Rotary and the Masons.

Mr. Hedberg is survived by his daughter, Mrs. John Quinn of S. Hadley, Mass.; a brother, Irving, of Holden, Mass.; and a sister, Mrs. Earl Harper of Worcester, Mass. His wife, Alma, died in 1965.

Luther Willis Hawley, '08

Luther Willis Hawley, '08, died on August 4, 1969, in New York City after a brief illness.

He was born in Brattleboro, Vt., in 1885 and graduated from Brattleboro High School in 1904. He graduated from WPI in 1908 with a degree in electrical engineering, and he went on to receive an LL.B. degree from George Washington University in 1914.

Following graduation from Tech, he taught in Braintree, Mass., before going to Washington, D.C., to work in the U.S. Patent Office and to study patent law. He later worked as a patent attorney for the Packard Motor Car Co. and the International Harvester Co. before joining the firm of Marshall and Hawley in New York City where he continued to practice until his death.

He married Lola Waugh on August 22, 1912, and they made their home in New Rochelle, N.Y., for 40 years. She died in September, 1957. He married his second wife, Henrietta, in 1960, and moved to Brooklyn where he lived at the time of his death.



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He is survived by his widow; a sister, Miss Jessie L. Hawley of Brattleboro; a son; two daughters; and seven grandchildren.

Burdette Joseph Halligan, '11

Burdette Joseph Halligan, '11, died of a heart attack while shopping in Greenfield, Mass., on October 31, 1969.

He was born April 15, 1888 in Shelburne Falls, Mass. and graduated from Arms Academy in Shelburne Falls in 1907. He entered WPI in the Fall of 1907 and graduated in 1911 with a B.S. degree in electrical engineering.

Mr. Halligan was employed for many years by the New York Telephone Co., from which he retired in 1946. From 1946 until his death, he was a representative for State Mutual Life Assurance Co. in Shelburne Falls. He was a member of the Shelburne Kiwanis Club, the Masons, and Catamount Sportsmen's Club.

He leaves two sons, Richard D. of Norristown, Pa., and Robert R. of West Sand Lake, N.Y.; a sister; and five grandchildren.

Harry Warren Button, '12

Harry Warren Button, '12, died on October 8, 1969 in E. St. Louis, III. at the age of 85.

He was born in Hartford, Conn. on June 18, 1884 and attended Suffield Academy before entering WPI where he earned his B.S. degree in electrical engineering. While in college he was elected to membership in Tau Beta Pi and Sigma Xi.

Mr. Button was vice president of Laclede Gaslight Co. in charge of generation and operations until that company was absorbed by Union Electric Co. of Missouri. He retired as plant superintendent from Union Electric in 1950.

He was a member of the American Institute of Electrical Engineers, and he was a Mason.

He is survived by his widow, Luella; a son, H. Warren; a daughter, Barbara; and seven grandchildren.

Henry Philip Ackermann, '13

Henry Philip Ackermann, '13, passed away on September 8, 1969 in Metropolitan Hospital, Detroit, Mich.

Mr. Ackermann was born in Adams, Mass. on August 13, 1888 and attended high school in Adams before enrolling at WPI. He married Sadie L. Curtiss on May 26, 1921 in Detroit, and he was employed by Chevrolet Gear and Axle in Detroit until his retirement.

He is survived by his widow; a daughter, Mrs. Dona Horton of Livonia, Mıch.; a son, Ralph C. of Dearborn, Mıch.; a sister, Anna K. Ackermann; and seven grandchildren.

Arthur W. Turner, '13

Arthur W. Turner, '13, died en route to a hospital after suffering a heart attack on October 9, 1969 in Warner, N.H.

Mr. Turner was born in Worcester, Mass. on January 5, 1890, and he attended high school in Templeton, Mass. He entered WPI in 1909 and majored in chemical engineering. He had lived in Warner for the last 15 years and had devoted much of his time to renovating toys for the children's Christmas boxes given to local children. He was a member and past officer of the American Legion and Mount Hope Masonic Lodge, Gardner, Mass.

Survivors include his widow, the former Margaret Ruggles; three sons, John S. R., Morrison F., and Alden W.; two daughters, Marjorie T. Etler of Amherst, Mass. and Martha T. Gelinas of Framingham, Mass.; 15 grandchildren; and 9 great-grandchildren.

E. Russell Karb, '14

E. Russell Karb, '14, passed away on October 3I, 1969 in a nursing home in Framingham, Mass.

He was born on June 27, 1892 in Natick, Mass. Before entering WPI in 1909, he attended Natick High School. While at WPI he majored in mechanical engineering and was a member of Theta Chi fraternity. He graduated in 1914.

Mr. Karb spent his entire business career of 39 years as an employee of the Dennison Manufacturing Co. where he was production manager of the box division for 30 years. He retired in 1953.

He was active in many musical organizations, the Plymouth Congregational Church in Framingham, and in town affairs.

He is survived by his widow, Gladys (Doty) Karb; two sons, Richard D. of Framingham and Alan of Cherry Hill, N.J.; a sister, Mrs. Alfred B. Rich of Framingham; and seven grandchildren.

Philip Freeman Murray, '15

Philip Freeman Murray, '15, a resident of Merion Station, Pa. and a summer resident on Nantucket Island, Mass., died on August 29, 1969, after a long illness.

He was a retired insurance broker and was associated with the Penn Mutual Life Insurance Co. of Philadelphia.

Mr. Murray attended high school in Cleveland, Ohio, and entered Tech in 1911. He was a member of Phi Gamma Delta Fraternity. He served as a lieutenant in the U.S. Army in World War I and held the rank of lieutenant colonel in the Army in World War II.

He was a member of the Society of Mayflower Descendants, the Union League of Philadelphia, Merion Cricket Club, and the American Sons of the Revolution. He was a past president of the Merion Civic Association and a member of the Nantucket Yacht Club and the Cliffside Beach Club.

He leaves his widow, the former Edith Hornickel; two daughters, Mrs. Margaret Schoff of Darien, Conn., and Mrs. Jean Lewis of Berwyn, Pa.; a sister, Mrs. Grover Burrows of Newtown, Conn.; and six grandchildren.

Robert Whitney Bartlett, '16

Robert Whitney Bartlett, '16, suffered a fatal heart attack at his home in Memphis, Tenn. on November 20, 1969.

Born on July 17, 1892 in Westfield, Mass., Mr. Bartlett attended Westfield (Mass.) High School before enrolling at WPI in the fall of 1912. He withdrew from school in 1914 and earned his B.S. degree from the University of Maine two years later.

He was employed for a number of years by Barrow-Agee Laboratories in Memphis, Tenn. as a senior chemist. He retired in October, 1961.

Among his survivors is his son, William R. Bartlett of Memphis, Tenn.

Eric Harry Fors, '16

Eric Harry Fors, '16, retired vice president in charge of foreign affairs and director of the Morgan Construction Co., died on September 16, 1969, in Worcester.

He was born in Worcester and attended preparatory school in Real Skola, Sweden. He graduated from Tech, where he was a member of Theta Chi Fraternity, in 1916 with a mechanical engineering degree. He was a member of the British Iron and Steel Institute and spent most of his life in Europe.

He married the former Nellie Jackson in

Mr. Fors is survived by his widow; two sisters, Mrs. Marie Gullberg of Clinton, Mass., and Mrs. Lillie Peterson of Worcester; and several nieces and nephews.

William Wheeler Hall, Jr., '18

William Wheeler Hall, Jr., '18, died on August 24, 1969 in Malden (Mass.) Hospital after a lengthy illness.

Mr. Hall was born in Malden and attended St. John's Military Academy, Manlius, N.Y., before coming to Worcester Tech in 1914. In 1920 he established the firm of W. W. Hall & Sons in Malden, selling building materials and fuels.

His depth of knowledge in finance caused him to be constantly sought for counsel and advice. He was director since 1926 and president since 1964 of the Fellsway Co-operative Bank, a director of

the Malden Morris Plan Bank, and a corporator of the Malden Savings Bank and Malden Hospital. He was also a member of the Malden Kiwanis Club, Phi Gamma Delta Fraternity, and a 32nd degree Mason.

Mr. Hall traveled extensively throughout the United States, Europe, and South America and spent much time showing pictures of his travels.

He was the husband of Mrs. Pauline (Sheldon) Hall, whom he married in Malden on June 16, 1928.

George Robert Roden, Jr., '20'

George Robert Roden, Jr., '20, died on November 3, 1969 in Pasadena, Calif.

Born in Ogontz, Pa. on February 18, 1898, he attended Cheltenham (Pa.) High School before enrolling at Tech in 1916. He was a member of Alpha Tau Omega fraternity.

Mr. Roden was sales manager of the Window and Door Div., Truscon Steel Div., of Republic Steel Corp., and he was located in Youngstown, Ohio prior to his retirement in 1963. Upon retirement, he moved to Altadena, Calif.

He married the former Lurline E. Brayley in 1930. They had a daughter, Carolyn, and a son, G. Robert, III, who died in 1955.

Harold Willard Bodwell, '27

Harold Willard Bodwell, '27, died in a Boston (Mass.) hospital on September 28, 1969, after a brief illness. He was 64.

Mr. Bodwell was born on March 3, 1905 in Methuen, Mass., and he attended Methuen High School. He entered WPI in 1923, and he was a member of Phi Sigma Kappa fraternity. While he was enrolled at WPI, he received letters in football and track and was elected secretary of the Athletic Association.

He was a dairy farmer in Kensington, N.H. for 40 years, operating the Bodwell Dairy Farm. He was a member of numerous agricultural organizations.

Mr. Bodwell is survived by his wife, Dorothy (Turner) Bodwell; six children; 22 grandchildren; and one great-grandson.

Edward John Purcell, Jr., '27

Edward John Purcell, Jr., '27, died at his home in Worcester on November 15, 1969.

Born in Woonsocket, R.I. on December 3I, 1905, he entered WPI in the fall of 1923 after attending North High School in Worcester. He graduated in 1927 with a degree in electrical engineering.

Mr. Purcell was employed by Morgan Construction Co., American Telephone & Telegraph Co., and Riley Stoker Corp., all in Worcester, before joining the staff of Boys Trade High School in Worcester in 1938 as a drafting instructor. He was named assistant director of the school in 1946 and director in 1965. He retired from the school in October, 1968.

He was active in the American Legion and was a veteran of World War II. He was a former commanding officer of the Naval Reserve Officers School in Worcester and had served the city of Worcester as chief of civil defense operations from 1951 to 1966.

He is survived by his widow, Mary (Foley) Purcell; a daughter, Grace L. Dietz of Poughkeepsie, N.Y.; a brother, Warren R. of Natick, Mass.; and two grandsons.

Donald Bascom Pike, '28

Donald Bascom Pike, '28, died at his home in Hingham, Mass. on October 20, 1969, at the age of 63. He had been in ill health for several weeks.

He was born in Everett, Mass. on October 16, 1906, and attended Holden (Mass.) High School. He graduated from WPI in 1928 with a B.S. degree in electrical engineering.

Mr. Pike was employed for 15 years by the Niagara Mohawk Power Co. in Albany, N.Y. before he joined Stone & Webster Engineering Corp. of Boston as an electrical draftsman. He had worked for them for over 25 years at the time of his death.

He was very active in the Hingham Congregational Church and the Hingham Historical Society. He was also a member of the American Institute of Electrical Engineers and the National Association of Corrosion Engineers.

Surviving him are his widow, Lillian (Modig) Pike; a son, Robert M., USN; a daughter, Ellen M. Pike of Hingham; and a brother, Stuart, of E. Greenwich, R.I.

Carl Gustav Larson, '30

Carl Gustav Larson, '30, died August 9, 1969 at his home in Worcester at the age of

Mr. Larson had been a plant superintendent for the Reed Prentice Corp. of Worcester and later a development engineer for them after spending nine years as plant superintendent for Botwinik Brothers Corp. of Worcester. He had also been employed by Norton Co. of Worcester, R. J. Rodday Co. of Boston, and Harrington & Richardson Arms Co. of Worcester.

Mr. Larson was born in Hoganas, Sweden, and attended school there. He entered WPI in 1926 and graduated with a degree in electrical engineering. While at Tech, Mr. Larson was an outstanding swimmer, and in 1930 as a senior, he set a New England medley record.

He is survived by his mother, Mrs. Albina (Hernstron) Larson in Sweden; his widow, the former Alice Wiberg; a son, Carl L.; two daughters, Miss Linda K. of Worcester and Mrs. Steven H. Nelson of Colorado Springs, Colo.; a sister in Sweden; and three grand-children.

Charles Thomas McGinnis, '32

Charles Thomas McGinnis, '32, died at the Memorial Hospital in Worcester on October 18, 1969, at the age of 59.

He was born in Worcester on December 4, 1909 and entered WPI in 1928. He was a member of Theta Chi fraternity.

Mr. McGinnis had been employed as a machine designer for the Morgan Construction Co. of Worcester for over 20 years. He had previously been employed by the Riley Stoker Corp. of Worcester and the Civilian Conservation Corps in Hartford, Conn. He was a member of the Massachusetts Society of Professional Engineers.

He leaves his widow, Mrs. Mildred R. (Farrell) McGinnis; three sons; two daughters; three brothers; three sisters; and 13 grandchildren.

Robert Fiske Bye, '33

Robert Fiske Bye, '33, was found dead by firefighters in Worcester on September 14, 1969, after fire swept his apartment. He was 60.

Mr. Bye attended high schools in Maine and Worcester and graduated from Tech in 1933 with a B.S. degree in mechanical engineering. He was a member of Phi Sigma Kappa Fraternity. He had been assistant general manager of Cherron Precision Gage and Tool Corp. in Lynn, Mass. and in 1962 he became self-employed as an artist and writer.

Mr. Bye is survived by his wife, Loretta; a son, John F. of Kennebunk, Me.; a daughter, Mrs. Janice Diane of Westboro, Mass.; a sister; and two grandchildren.

Dixon Chapman Burdick, '36

Dixon Chapman Burdick, '36, of Hughesville, Md., died on July 22, 1969 at Providence Hospital, Washington, D.C.

Born September 17, 1914, in Norwich, Conn., he attended Manchester High School prior to entering Tech. While at Tech he majored in chemistry. He was a member of the basketball team and Skeptical Chymists.

He was a research scientist at the Navy Research Bureau at Anacostia, Md. He was a veteran of World War II, and a captain in the Naval Reserve.

Surviving are two daughters and three sons; his wife, the former Mary E. King; a sister, Mrs. Phyllis B. Howeson of Manchester, Conn.; and a niece.

Kenneth Walker Fowler, '40

Kenneth Walker Fowler, '40, died on November 4, 1969 in Worcester, Mass., at the age of 51.

He was born in Winthrop, Mass. on September 2, 1918 and attended Winthrop Senior High School. He graduated from WPI in 1941 with a degree in mechanical engineering. He later received an MBA degree from Boston University in 1957. While at Tech he was active in the Masque and the student chapter of A.S.M.E. as well as being a member of Theta Chi fraternity.

Mr. Fowler was a veteran of World War II and joined the staff of Tech in 1946 as an instructor in mechanical engineering. He left WPI in 1956 to join Worcester County National Bank and at the time of his death he was assistant vice-president.

He was a member of the American Institute of Plant Engineers and the National Society of Professional Engineers and was a registered professional engineer in Massachusetts. He was also a member of the Worcester Engineering Society. He was active in the Boy Scouts and was a Mason.

He is survived by two sons, Brian K. and Miles W.; a daughter, Carol I.; a sister; and two brothers, one of whom is Robert Fowler, Jr., '36.

Victor Roger Romasco, SIM '65

Victor Roger Romasco, SIM '65, died at his home in Whitinsville, Mass. on September 23, 1969 after suffering a heart attack. He was 52.

He was born in Uxbridge, Mass. on November 26, 1916 and attended Uxbridge

High School and Northeastern University.

Mr. Romasco joined Whitin Machine Works, Whitinsville, in 1937 and at the time of his death had risen to be production control manager.

He was an Air Force Veteran of World War II and among his medals was a Purple Heart with an oak leaf cluster. He was a member of the Milford (Mass.) Post, Disabled American Veterans, and the Whitinsville Golf Club.

Besides his mother, Mrs. Nicola (Sabatino) Romasco, he is survived by his widow, Muriel A. (Wood) Romasco; two sons, Stephen and Mark; a daughter, Mrs. Cheryl A. DeFalco of Northboro, Mass.; and two brothers, John and Mario, both of N. Uxbridge.

YOUR CLASS AND OTHERS

1908

It has been reported that Fannie G. Andrews, wife of *Bernard R. Andrews*, died on August 30, 1969. As classmates, we extend our sincere sympathy to Bernard and his family.

Donald D. Simonds, Secretary

1913

George E. Chick is treasurer of John F. Chick & Son, Inc. in Silver Lake, N.H.

1917

Moses H. Teaze writes: "Nothing much to add at the 'ripe old age' of 80½ except to think back about pleasant memories of which my years at Worcester Tech are most important. Mrs. Teaze and I have enjoyed our nearly 50 years of life together and now in our old New England farmhouse in Weston (Conn.). We also enjoy seeing our three children lead successful lives and now our grandchildren and great-grandchildren add 'spice' to life!"... Alfred W. Francis has retired from Mobil Chemical Co. and is living in Metuchen, N.J.

1920

John Q. Holmes writes that "Mrs. Holmes and I have now been in 58 countries of the world. We are running out of places to go." Last summer they took a 47-day cruise to all the Scandinavian countries, U.S.S.R., Germany, Holland, Belgium, and Ireland... Raymond D. Bishop reports that he is enjoying retirement in Brattleboro, Vt.

1922

Russell M. Field has retired as supervisor of shipbuilding and head of interior communication and fire control for the U.S. Navy in Quincy, Mass. He makes his home in S. Weymouth. He writes: "Howard F. and Claire Carlson were hosts to the following original members of the class of 1922 and their wives at their mountain top retired home in Sanbornton, N.H. on Oct. 11, 1969: Roy G. and Mariam Bennett, Wellington H. and Neva Bingham, John and Marion Cassie, Russell M. and Luella Field, Carl M. and Opal Holden, James L. and Rachel Marston, George F. and Winnie Parsons, and John G. Snow."

1925

Robert B. Scott is retired and makes his winter home in Mesa, Ariz. In the summer he resides in Minneapolis, Minn.

1926

Kenneth R. Archibald has accepted a position as Executive Director of the Springfield (Vt.) area Chamber of Commerce. He was formerly Executive Director of the Ludlow (Vt.) Chamber of Commerce... John S. Miller has retired from the Torrington Co., Torrington, Conn. He was assistant manufacturing manager of the bearings division... A. Harold Wendin is now living in Mesa, Ariz. He writes: "We have been wandering around the country and Mexico for the past three and one-half years. It has been a wonderful retired life and we are

looking forward to many more exciting and interesting trips.".

1929

Boris Dephoure reports that he is retired from Sears, Roebuck & Co. and that on August 22, 1969 he married Helen Miller after being a widower for 13 years. He lives in Hollywood, Fla.

1930

George E. Perreault recently retired from Bell Telephone Laboratories after a career of 39 years. He was supervisor of the Switching Apparatus Development Group in Holmdel, N.J.

1931

Jay Harpell reported in the fall that he is working for Pope, Evans & Robbins International, Ltd. in Saigon as chief electrical engineer... Charles A. Kennedy has retired from Worthington Corp. and is living in Short Hills, N.J.

1933

A. Elmer Pihl is employed as an electrical engineer by the Leland Gifford Co. of Worcester, and he makes his home in S.Yarmouth, Mass... Joseph S. Virostek, a senior partner in the law firm of Virostek & Virostek, E. Douglas, Mass., has been nominated by Mass. Governor Sargent as special justice of the Second Southern District Court of Worcester County... Emil C. Ostlund is presently self-employed as a consulting engineer in Dover, Mass.

1934

William E. Mesh is a senior engineer for IBM Corp. in Rochester, Minn.

Addition

Additional Contributors to the 1968-69 Annual Alumni Fund are:

Sumner A. Norton, '33 Robert W. Baker, '36 Gordon E. Hitchcock, '49 Joseph S. Vitalis, '51 Thaddeus Betts, '64 CENTURY CLUB: Charles F. Monnier, '27 BOOSTER CLUB: Lester H. Longton, Jr., '49

1935

Frank O. Holmes, Jr. is the Manager of Research and Development for the Thompson Aircraft Tire Corp. in S. San Francisco, Calif... Charles S. Smith reports that he has left Shenango Furnace in Cleveland, Ohio and has opened his own business in Pompano Beach, Fla. as a marine consultant. He says he is looking forward to life in the sunshine state... William R. Steur has been named Director of Engineering for Sargent & Lundy of Chicago. He has been with the company continuously since his graduation from WPI.

1936

Harold F. Pomeroy is employed by Northeast Utilities Service Co. in Hartford, Conn., as Superintendent, Transmission and Distribution. He lives in Glastonbury.

1938

Robert O. Alexander is now employed by the Kendall Co., Walpole, Mass. . . Albert J. Kullas is planetary systems vice-president of Martin Marietta Corp. in Denver, Colo. At present, he is largely responsible for the design of a craft to land on Mars and he was previously director of the technical staff which developed the Titan II rocket...A. George Mallis has been sworn in as the Civil Engineer on the Massachusetts Board of Professional Engineers... Robert B. Abbe was recently appointed assistant professor at Thames Valley State College in Norwich, Conn. His son, Pat, is a member of the class of 1970 at WPI... Dr. Arnet L. Powell is now Deputy Director and Chief Scientist for the Office of Naval Research in Boston, Mass. He makes his home in Wayland, Mass.

1939

John M. Driscoll, vice president, sales. Western Hemisphere, of the M. W. Kellogg Co., has been elected a vice president and director of Canadian Kellogg Co., Ltd., in Toronto, an affiliate company of M. W. Kellogg... Oiva John Karna is currently in

Madrid, Spain, working for the Foster Wheeler Corp... *Bradford W. Ordway* says, "After 30 years with Heald Machine, have retired to devote full time to investments in real estate. Currently on drawing board — 100 family lakeside community within 20 minutes of downtown Worcester."

1940

Benedict K. Kaveckas is presently chief mechanical design engineer for Information Transfer Corp. in Wellesley Hills, Mass. He is involved in the design of desk top computers for the instruction of students.

1941

K. Blair Benson is employed as a staff consultant, Advanced Technology, to the general manager of engineering and development for the CBS television network. He resides with his wife and four children in S. Norwalk, Conn. . . Harvey W. Eddy is now a Brigadier General in the U.S. Air Force and has assumed command of the Office of Aerospace Research (OAR) in Arlington, Virginia... Rotron, Inc. of Woodstock, N.Y. has promoted Berkeley Williams, Jr. to the position of manager, Design Documentation and Support... George A. Cowan is serving the American Chemical Society as chairman of the Division of Nuclear Chemistry and Technology in 1970. He also reports that: "(I am) moonlighting as chairman of the board, Los Alamos (Calif.) National Bank."

1942

John M. Bartlett, Jr. has left the Morgan Construction Co. in Worcester and is now employed as Products Sales Manager at Hobbs Manufacturing Co. in Worcester... Paul Yankauskas is with Los Angeles Period Furniture Co. in Los Angeles... Also in California is David M. Coleman. He is employed by the Diamond Shamrock Co. in Redwood City as Production/Sales Coordinator... Allan G. Anderson is President of Underseas Engineering, Inc. in Riviera Beach, Fla., and he makes his home in Palm Beach Gardens... Wilbur H. Day is an engineering branch manager for the Singer Co., Link Div., in Silver Spring, Md.

1943

Jackson L. Durkee is chief bridge engineer for Bethlehem Steel Corp., Fabricated Steel Construction, in Bethlehem, Pa... George F. Fairhurst has been elected the fourth President of the Society of Logistics Engineers. George is employed as Manager of Engineering Support and Logistics with RCA Electromagnetic and Systems Div., Van Nuys, Calif... George W. Golding, Jr. is principal structural engineer for Jackson & Moreland Div., United Engineers and Con-

structors, Inc. in Philadelphia. He is located in Santurce, Puerto Rico.

1944

Irving James Donahue, Jr. is President and Treasurer of Donahue Industries, Inc., Carroll Pressed Metal Div., Component Plastics Div., which has recently completed a move to a new plant in Shrewsbury, Mass. Jim continues to be very active in many public and private organizations, including being Chairman of WPI's Alumni Fund Board... Sidney Stayman is President of Stamina Mills, Inc. in New York City and he resides in Mamaroneck, N.Y... Thomas A. Bombicino is vice-president — manufacturing and research at New England Mica Co. in Waltham, Mass.

1945

Anson C. Fyler has been named a director of Phoenix Mutual Life Insurance Co. in Hartford, Conn... Harold D. Fleit reports that he is now living in Bayside, Wis... Jamesbury Corp. in Worcester reports that Olavi H. Halttunen is their vice-president — marketing... Albert P. Talboys is located in Washington, D.C., working for Air Pollution Control.

1946

George E. Comstock, III has formed a computer equipment company in Hayward, Calif., Diablo Information Systems Corp., of which he is president. Four days after the company was formed, ITEL Corp. purchased part of the company for \$2 million... Dr. John L. Brown is now at the University of Rochester (N.Y.) as a Professor of Psychology and Visual Science. He had previously been at Kansas State University as vice president for academic affairs. . . Dr. Roland W. Ure, Jr. is also in the field of education. He is Professor of Materials Science and Electrical Engineering at the University of Utah, Salt Lake City. . . We have learned that Bernard L. Beisecker has been appointed assistant general manager of Reed & Prince Mfg. Co. in Worcester.

1946B

John W. Carpenter, Jr. is district sales manager for National Homes Corp. in Grand Rapids, Mich.

1946D

Allen Breed has informed us that he has recently returned to the States from Japan and that he is now living in Saratoga, Calif. He is employed by the Nuclear Energy Div. of General Electric in San Jose, Calif. . The Kuhlman Transformer Co. of Lexington, Ky. has hired Richard F. Propst as their manager of distribution, transformer pro-

ducts. Prior to this move, he had been employed by G.E. for 23 years... Manuel Renasco has formed a consulting engineering firm in Rumford, R.I., Guillemette-Renasco Associates.

1947

H. Edwin Johnson is now living in Scottsdale, Ariz. and is employed by General Electric Co. in Phoenix as a marketing specialist... Kenneth H. Truesdell has been promoted to Manager, Systems Support, at Pratt & Whitney Aircraft, E. Hartford, Conn. Ken, his wife, and three children live in S. Glastonbury, Conn.

1948

Robert A. Green has been elevated to the executive staff at Avco Bay State Abrasives Div. in Westboro, Mass. Bob is now director of safes.

1949

Dean P. Amidon is presently chief district engineer for the Massachusetts DPW in the Pittsfield Area. . . New London, Conn. is the location of John R. Hunter. He is manager of electrical engineering at General Dynamics-Electric Boat Div... Daniel L. McQuillan reports he is now living in Mattapoisett, Mass. Dan is senior vice president for the Aerovox Corp. in New Bedford, Mass, and he is in charge of three plants. . . Dynamics Research Corp. has informed the Association that they have promoted Abraham W. Siff to the position of marketing manager of its Components Div. He lives in Watertown, Mass... Edward H. Dion is an electrical engineer for the U.S. Air Force at Westover AFB, Mass. Ed received his MBA last year from Western New England College...Roger N. Wentzel is a mechanical engineer at the U.S. Army's Mobility Equipment Research and Development Center at Fort Belvoir, Va. . . Charles C. Allen writes: "I have just returned to General Electric's Research and Development Center in Schenectady, N.Y. after a very stimulating year on leave as Visiting Associate Professor of Electrical Engineering at Union College in Schenectady. It was a rewarding experience both working with the students and renewing and updating my grasp of fundamentals."

1950

Paul J. Brown is a manufacturing engineer for Wico, the Prestolite Div. of Eltra Corp. in W. Springfield, Mass... Richard Connell writes: "For a fellow who stayed in one place for 14 years, I have really jumped around in the last year." He is currently Chief Electrical Engineer for Automated Handling Systems Inc. in Washington, D.C., and he says his family enjoys the area. They

are living in Bethesda, Md... Tejinder Singh reports he has now become the manager of the Bombay (India) terminal for Burmah-Shell Refineries Ltd. He says, "If anyone from Tech ever happens to be in India... my wife and I would both be very glad to see them and assist them in any way we can."... Royal Typewriter Co., Div. of Litton Industries, has Robert F. Stewart as their President. Bob lives in W. Hartford, Conn., with his wife, Joan, and their two children... Richard H. McMahan, Jr. is a senior systems analyst for General Electric Co. and is living in Honolulu, Hawaii.

1951

Walter R. Anderson lives in Sudbury, Mass, and is President of IRA Systems, Inc. in Waltham...Bailey Meter Co. employs William J. Cunneen as its manager of computer sales in Wickliffe, Ohio... E. I. Du-Pont deNemours & Co. has informed us that Paul E. Thomas, MS, is now in Geneva, Switzerland. . . Roger E. Wye writes: "After eighteen years with Philco (Philco-Ford), I am joining up with Magnavox as Director of Engineering of Fort Wayne Operations in Indiana,"... Capt. Edward A. Kacmarcik is an Administration Management Officer for the U.S. Air Force. He is stationed at Stewart AFB, N.Y... Celanese Fibers Marketing Co. in Charlotte, N.C., now employs Robert M. Luce... Antonio J. Renasco is Consul General for the Nicaraguan Government in Houston, Texas... Scott Paper Co. employs Phillip G. Blair as a finishing engineer at their Detroit (Mich.) plant... Pratt & Whitney Aircraft in E. Hartford, Conn. has named Herbert J. Hayes, Jr. chief, product support engineering - commercial airline engines. . . Thomas A. McComiskey is a project engineer for Bethlehem Steel Corp. in Leetsdale, Pa.

1952

Ray N. Fenno is a civil engineer with Charles T. Main, Inc. in Boston. He lives in Norwell, Mass... Walter H. Rothman reports that Sanders Associates has transferred him to S. Portland, Me., and that he is living in Portland... George F. Whittle is now residing in Weymouth, Mass. and is self-employed as a manufacturers' representative... Edgar L. VanCott, Jr. has recently accepted a position at Devonshire Computer Corp. in Dedham, Mass. He is vice-president—engineering and manufacturing.

1953

The new chief of the Development Div. of the Air Force is Major *Emil G. Larson*. He is currently stationed in Wiesbaden, Germany... Also in the armed forces is *Robert G. Lunger*. He is in the Design and Development Branch of the Explosive Ord-

nance Disposal Center at the U.S. Army Picatinny Arsenal in Dover, N.J... Heald Machine Co. in Worcester has announced that Orren B. McKnight, Jr. has been appointed domestic sales manager. . . Henry A. Vasil writes: "I am still working for Boston Edison Co., now as a supervising engineer in the Electrical Operations Dept. He, his wife Louise, and son Michael live in W. Roxbury, Mass... G. Brady Buckley is now living in Erie, Pa. and is working for General Electric Co. in Erie as Manager - Marketing Transportation Parts. . . George E. Saltus is with Bell Telephone Labs in Denver, Col. as a department head... Donald R. Campbell is a program manager for the U.S. Navy Underwater Sound Lab. at Fort Trumbull, New London, Conn. . . Western Electric Co., Inc. has transferred John H. Gearin, Jr. to Indianapolis, Ind., where he is manager, manufacturing and industrial engineering.

1954

IRA Systems, Inc. of Waltham, Mass. has a new computer systems manager in the person of Clayton S. Brown. He makes his home in Westwood. . . Dr. Richard E. Gilbert is in the Chemical Engineering Dept. at the University of Nebraska in Lincoln... Harry L. Mirick has been appointed the director of manufacturing for the Precision Metals Div. of the Hamilton Watch Co. Harry and his family now live in Lancaster, Pa...Robert C. Pickford is a systems analyst project leader for the American Optical Co. in Southbridge, Mass., and he makes his home in Sturbridge... The assistant to the head of the Weapons Development Dept. of the U.S. Naval Underwater Weapons Research & Engineering Station in Newport, R.I. is Edwin Shivell. He has been with the station since 1955... George D. Ramig is Product Manager/Electronic Ceramics for Magnetics, Inc. in E. Butler,

1955

Francis J. Horan, Jr. has won the Northampton (Mass.) Jaycee's Distinguished Service Award as the outstanding young man in Northampton for 1968 and 1969. He is a district sales manager for the Massachusetts Electric Co... Peter S. Morgan, SIM, is now Vice-President — Administration and Purchases for Morgan Construction Co. in Worcester. He has also been elected a trustee of Worcester Junior College.

1956

John H. Rogers, Jr. is a special representative for E. I. duPont deNemours and Co., Inc. in Wilmington, Del. . William A. Johnson is employed by Arthur D. Little, Inc. in Cambridge, Mass. as a consulting chemical engineer. . . Ronald A. Venezia is a Com-



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43

mander in the U.S. Public Health Service. Ron is presently assigned to Washington Univ. in St. Louis to work on his doctorate in Environmental Engineering. . . Edwin B. Coghlin, Jr. has been elected a trustee of Worcester Junior College. . . Arnold M. Hall writes: "I recently joined two associates in forming a new company devoted to the design and fabrication of air cushion vehicles. The company was incorporated in April, 1969 and is known as Air Cushion Technology Corp. It is in Groton, Conn." Arnold is the company's vice-president.

1957

David E. Stuart is the new assistant director of the New England Power Exchange. He and his family reside in Southwick, Mass... Howard C. Dickson is a sales engineer for Ingersoll-Rand Co. in Philadelphia, Pa. He resides in Newark, Del... Sprague Electric Co. in N. Adams, Mass. employs Robert R. Purple as Marketing Manager — Filter Div... Stephen Z. Gunter is an assistant project scientist for the Jet Propulsion Laboratory, division of Cal Tech.

1958

Roger L. Alvey is now a product merchandiser for the Minnesota Mining & Manufacturing Co. in St. Paul, Minn. He makes his home in Stillwater, Minn. . . Paul Dalton tells us that he has moved about once a year for the last three or four years. He is presently plant manager for the Monsanto Co. in Yardville, N.J., and he lives in Mercerville... Dr. Larry Dworkin is now a project engineer for the U.S. Government at Fort Monmouth, N.J... M. B. Associates in San Ramon, Calif., has Edward C. Fraser as a program manager... Donald R. Grenon is a District Electrical Engineer for the Connecticut Light and Power Co. in Waterbury, Conn. He resides in Cheshire... James K. Karalekas is City Traffic Engineer for the town of E. Providence, R.I. He is also President of the Rhode Island Chapter of the WPI Alumni Association... Peter J. Ottowitz has been appointed manager of the Scientific Div. of O. S. Walker Co., Inc. in Worcester. He came to O. S. Walker from Texas Instruments, Inc. . . Bernard M. Campbell, Jr. reports that he is now back in the Worcester area and is employed by Avco Bay State Products Div. in Westboro as a project engineer... William J. O'Neil is an automation sales engineer for General Electric Co. in New York City...J. William Belanger, Jr. is Executive Vice-President of Multi-Logic Corp. in Lexington, Mass.

1959

Married: David B. Sullivan to Miss Judith Mary Andersen of Closter, N.J., on June 28, 1969. Among the ushers was Ronald C. Pueschel, '63. Dave is an engineering supervisor with Grumman Aerospace Corp. in Bethpage, N.Y.

Thomas J. Downs has been promoted to construction supervisor in the Waterbury (Conn.) office of the Southern New England Telephone Co. He is also a lieutenant in the U.S. Coast Guard Reserve... John A. McManus has been appointed director of the New Britain (Conn.) Water Dept. . . Charles T. Smith, Jr. has received his master's degree in business administration from Northeastern University and is employed by the Foxboro Co. in Foxboro, Mass. as a project engineer... Frederick J. Costello is District Sales Manager for Union Carbide Corp. in Chicago, ... Thomas F. Humphrey is Vice-President and Treasurer of Urban Transportation Systems Associates, Inc. in Wellesley, Mass... Hamilton Standard Div. of United Aircraft Corp. in Windsor Locks, Conn. employs Armand Ruby, Jr. as a chemical engineer... James Cinquina, Jr. writes: "I resigned from St. Regis Paper Co. to take a position as project engineer with Better-Built Machinery Inc., Saddle Brook, N.J."... Roger E. Miller received a master's degree from Florida Institute of Technology in September, 1969 in systems management... Major Joseph B. Vivona is now stationed in Ankara, Turkey, where he is a signal planner.

1960

Paul W. Bayliss has been promoted by Bell Telephone Laboratories in Murray Hill, N.J., to Director of the Employee Activities Center and Secretary of the Employees' Benefit Committee. . . Dr. Robert C. Bearse, who received his doctorate degree from Rice University in 1964, is now an Assistant Professor at the University of Kansas in the Physics and Astronomy Dept... Pratt & Whitney Aircraft Div. of the United Aircraft employs Donaldson A. Dow as a senior design engineer in W. Palm Beach, Fla... Frank A. Droms, Jr. is employed by Thompson Ramo Woolridge Systems in Washington, D.C... Sang Ki Lee is now a patent attorney for Western Electric Co. in N.Y.C. . . Francis G. Toce has written us to say that he has become Manager of Engineering of the Closed Circuit TV Unit of General Electric in Syracuse, N.Y... Nathan O. Beale is manufacturing manager for Eastern Industries, Div. of LFE, in Hamden, Conn... George H. Cadwell, Jr. is Vice-President of Flanders Filters, Inc. in Washington, N.C. . . Lawrence W. Cochrane, Jr. is now living in Marblehead, Mass. . . Edward P. Donoghue has been appointed Corporate Manager of Management Information Systems of American Biltrite Rubber Co. in Boston, Mass... David A. Mudgett is an engineer for M.1.T.'s Lincoln Labs. working at Project Press in Honolulu. . . Chester W. Stanhope is an Assistant Professor in the E.E. Dept. at Merrimack College in Lawrence, Mass... Bankers Trust of New York City employs David J. Welch as an official assistant. David received his MBA this year from the Wharton School at the University of Pennsylvania. . . Edward J. Russell is now employed by Booz, Allen & Hamilton, Inc., management consultants, in New York City... Ronald F. Pokraka is eastern marketing manager for Industrial Dynamics. He is located in Pennsauken, N.J... We have learned that Jon E. Thorson is still with IBM and that he is living in Hyde Park, N.Y. In the last two years he has done some traveling throughout Europe, and he is awaiting the publication of his second article... John S. Vale has received a Juris Doctor degree from Suffolk University, and he took the Massachusetts Bar exam in December of 1969. He is presently product manager at P.R. Mallory & Co., Inc. in Burlington, Mass.

1961

Married: Richard T. Davis to Miss Dorothy I. DeSocio of Hewitt, N.J. on September 6, 1969. They are living in New Rochelle, N.Y., and Dick is working in New York as an associate editor for MicroWaves magazine which is published by Hayden Publishing Co... John A. Quagliaroli to Miss Judith Sylvia Fowler of Syracuse, N.Y., on November 15, 1969. John is a marketing representative of IBM Corp. in Syracuse.

Lawrence L. Israel is Manager of OEM Product Development in the Peripheral Products Dept. of Scientific Data Systems, a Xerox Co. He resides in Santa Monica, Calif. and says, "I would highly recommend the climate here to any Tech-Men who are thinking of relocating". . . Richard H. Nelson is now living in Indialantic, Fla., and is Assoc. Principal Engineer for Radiation Inc. in Melbourne, Fla. . . Dr. James W. Swaine, Jr. is a research chemist for Allied Chemical Corp. in Buffalo, N.Y... Dr. Charles E. Wilkes has been named a section leader at the B. F. Goodrich Research and Development Center in Brecksvifle, Ohio. . . Charles R. Lehtinen is with the Boeing Co. at Cape Kennedy. Charlie was the individual assigned the task of pushing the button that ignited the Saturn rocket which sent the Apollo II astronauts on their way to the moon. He says, "I also pushed the buttons launching Apollos 6 and 9 and will be doing it for Number 13."... Joseph P. Carpentiere is an account representative for General Electric Co. in Meriden, Conn. He fives in Clinton, Conn... The High Energy Physics Div. of Argonne (III.) National Laboratory

has Arthur F. Greene as a research associate... David M. Raab writes: "I received an MS degree in E.E. from Northeastern in 1966. Following that, I toured Europe for about a year and in 1968 took my 'last trip down the aisle. I now have a baby daughter, Sarah, and a house in Belmont, Mass... Lt. Norbert F. Toczko is stationed in Washington, D.C. at Coast Guard Headquarters and is Chief of the Family Housing Section...General Electric Co. employs Frank A. Verprauskus in its Nuclear Energy Div. in San Jose, Calif. . . Robert A. Weiss is an inventory product coordinator for Polaroid Corp. in Needham, Mass. . . Kenneth J. Blanchard now makes his home in Sacramento, Calif. He is employed as an assistant bridge engineer by the California Div. of Highways. He writes: "My C.E. colleagues in the East might be interested in knowing that a majority of our projects utilize the theories of prestressed concrete."

1962

The appointment of Roland J. Beauregard as supervisor of engineering services has been announced by Norton Co.'s Machine Tool Div. in Worcester. . . Jerald N. Hamernick is a sales engineer for Torin Corp. in Farmington, Mich... David N. Lyons is an Assistant Sanitary Engineer for the State of New York Health Dept. at Albany. . . Roger G. Massey is now with the Parker and Harper Manufacturing Co. in Worcester... Stanley Works in Newark, N.J. has John C. Robertson as their chief manufacturing engineer. . . Stanley J. Strychaz, Jr. reports that he recently joined the American Appraisal Co. in Milwaukee, Wisc... Barry J. Dworman is an account representative for General Electric Co. in Waltham, Mass. . . Paul F. Gelinas reports that he is now vice-president in charge of production for Hunter Sportswear, Inc. in Fitchburg, Mass... George E. Loomis is an assistant engineer for Turner Construction Co. in Boston, Mass. He resides in Wakefield... Peter C. Albertini was the 1969 Community Chairman for the town of Dover in the Massachusetts Bay United Fund campaign. Peter is a marketing specialist for Honeywell, Inc. in Lexington, Mass. . . Robert R. Cassanelli writes: "I am a senior food chemist working in new product development at General Foods Corp., Tarrytown, N.Y."... Paul E. Engstrom has been appointed assistant actuary, mathematical department, and an officer of State Mutual Life Assurance Co. of America, located in Worcester... Ebasco Services, Inc. employs Bartlett D. Fowler in Washingtonville, Pa. as an office engineer... David P. Norton received his MBA from Florida State University last year and is presently attending Harvard Business School... John M. Sam-

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borski has been promoted to assistant superintendent of the bicarb-Purecal department at Wyandotte Chemicals Corp., Wyandotte, Mich. John has been with the company since 1964, and he now makes his home in Riverview, Mich... Dr. John K. Tien received his PhD degree from Carnegie-Mellon University in June of 1969. His major was in Metallurgy and Materials Science... Joel N. Freedman is now employed as a member of the technical staff at The Mitre Corp., Bedford, Mass.

1963

Capt. Richard B. Allen received the Army's Bronze Star Medal for "outstanding meritorious service while serving in Vietnam." He is now stationed in San Francisco. . . Stanley J. Belcinski, Jr. has been named production manager for Massachusetts Steel Treating Corp., subsidiary of PresMet Corp. in Worcester... Robert E. Maynard, Jr. is attending Dartmouth College's Amos Tuck School of Business Administration . . . Dr. Kenneth C. Benton is a senior research chemist for Copolymer Rubber & Chemical Corp. in Baton Rouge, La... Edward A. Platow has received a Master of Management Science degree from Stevens Institute of Technology and is employed by Western Electric Co. in Princeton, N.J... Robert M. Desmond has returned to WPI as an assistant professor in the mechanical engineering department. Bob received his PhD degree from the University of Minnesota in 1968, and he was on the staff at Clarkson College, Potsdam, N.Y., before returning to Worcester... The Badger Co., Inc. employs Roger D. Flood as a project manager in Cambridge, Mass. Roger resides in Needham. . . Robert J. Hermes, SIM, has been named Sales Manager for the Rolling Mill Dept. of Morgan Construction Co., Worcester. . . Dr. Stephen W. Nagy is an assistant professor in the physics department at the University of Vermont. . . Joseph R. Santosuosso is a thermal design and analysis engineer for General Electric Co., Information Systems Div., Phoenix, Ariz.

1964

Married: Adam S. Kochanek to Miss Crete M. Liadrakis of Chicopee, Mass., on June 22, 1969. Among the ushers was Lawrence M. Krasner. Stan received a BS in M.E. from WPI last June to add to the one he earned in Math in '64. He is employed by Banner Machine, Inc., in Springfield, Mass... Thomas G. McGee to Miss Sandra Clark Litchfield of Barre, Vt., on August 29, 1969. Tom received his master's degree in business administration from Harvard Busi-

ness School last June... Robert E. Parker to Miss Jeanne Marguerite Gravel of Blackstone, Mass., on September 1, 1969. Bob is Senior Materials Engineer for Pratt & Whitney Aircraft in E. Hartford, Conn... Walter F. Roach to Miss Kristin Wakefield of Londonderry, N.H., on July 12, 1969. The best man was Dennis W. Balog, and one of the ushers was Thomas B. Newman, Jr. Walt is an engineer with Sylvania Lighting Corp. in Manchester, N.H.

Allen W. Case, Jr., is back at Tech as a graduate assistant in the E.E. Dept... David A. Helming is a District Engineer for Public Service Electric and Gas Co. in Plainfield, N.J. "The Moose" lives in White House Station, N.J... Bruce A. Ochieano is employed by Arthur Andersen & Co. in San Francisco as a management consultant. . . Capt. W. Charles Zisch is stationed at Vandenburg AFB, Calif. . . David L. Gendron is a chemical engineer with Monsanto Co. in Indian Orchard, Mass. . . Bell Telephone Labs, Holmdel, N.J., employs Joseph L. LaCava as a member, technical staff. Joe makes his home in Marlboro, N.J.

· ·1965

Married: Patrick T. Moran to Miss Mimi Moylan of Hammond, Ind. in June, 1969. At the wedding were Stanley Szymanski, '64, David D. McCaffrey, '64, John D. Camera, Jr., '64, Bradley T. Gale, '64, Victor A. Maroni, '64, Joseph Gracia, Jr., John T. Hart, James F. Fee, and Eugene R. Dionne, '66. Pat received his MS in industrial engineering from Purdue in June and now lives and works in Kingston, N.Y., where he is an industrial engineer for IBM Corp.

Born: To Mr. and Mrs. Charles S. Frary, III, their first child and daughter, Kathryn Beth, in May, 1969. Chuck has been appointed New England Telephone manager in Framingham, Mass... To Mr. and Mrs. Marvin S. Berger, a son, Jonathan Mark, on October 8, 1969. Marv is a student at the Amos Tuck School of Business Administration at Dartmouth College.

1966

Married: Anthony S. Carrara to Miss Pamela Doucet of Manchester, N.H., on August 23, 1969. Tony, who holds an MS from M.I.T., is a civil engineer with Raytheon in Wayland, Mass... Chester J. Patch, III, to Miss Patricia Marion Richards of Wakefield, Mass., on June 28, 1969... Ronald C. Snell to Miss Judith M. McKinley of Winchester, Mass., on August 2, 1969. Donald J. Pearson was best man. Ron is an electrical engineer with Polaroid Corp. in Waltham, Mass... Gerard A. Toupin to Miss Annette M. Doucette of Torrington, Conn.,

on August 23, 1969. His best man was Charles C. Slama. Gerard is an engineer in the bearings division of Torrington Co., Torrington, Conn... Roger J. Zipfel to Miss Joyce Ann Kenyon of Wilmington, Del. on October 11, 1969. Roger is an engineer with E. I. duPont deNemours & Co., Inc. in Deepwater, N.J.

Born: To Mr. and Mrs. Lawrence A. Penoncello, their first child, a son, Scott Louis. Larry is a foreman for Torrington Co., Torrington, Conn...To Lt. j.g. and Mrs. James A. Cocci, a son, James John, on October 3, 1969. Jim is stationed at the Naval Security Station in Washington, D.C...To Lt. j.g. and Mrs. Peter J. Kudless, their first son, Christopher John, on October 16, 1969. Peter is presently the Resident Officer in Charge of Construction in the Can Tho-Binh Thuy area in Vietnam. He expects to return to the states in February, 1970.

Peter F. Behmke is a design engineer for Hoyt Mfg. Corp. in Westport, Mass. Peter lives in Swansea. . . Dr. Jerry Chih-li Ch'en, MS, is an Assistant Professor in the Dept. of Physical Sciences at Pan American College in Edinburg, Texas... Ecological Research Corp. in Hanover, N.H., employs Francis X. Dolan, Jr. as a research engineer. Fran lives in Norwich, Vt. . . Albert L. Giannotti, Jr. is a graduate student at the University of Buffalo, N.Y... We have been informed that James A. Keith is a Senior Design Engineer for Sanders Associates, Inc. in Bedford, Mass... James W. Pierce is a staff scientist for MIT's Lincoln Labs in Lexington, Mass... Monsanto Co. in Indian Orchard, Mass. has Donald C. Sundberg as a Senior Chemical Engineer... Ronald W. Wood has taken a job as Senior Marine Engineer with Litton Systems, Advance Marine Technology Div., in Los Angeles, Calif. . . Dr. John J. Wright is doing postdoctoral research at the University of Colorado...Lt. William E. Zetterlund is the officer in charge of construction for the U.S. Naval radio station. . . Capt. William F. Shields is with the U.S. Air Force, 4th Tactical Fighter Wing, Seymour Johnson AFB, N.C. . . Eugene G. Sweeney, Jr. is a sales engineer for Dow Chemical Co., Dow Industrial Service Div., in Stoneham, Mass. . . Philip I. Bachelder is now employed by Plastic Coating Corp., S. Hadley, Mass., as a senior research project engineer... Lt. Robert H. Cahill is currently stationed in Norfolk, Va. and is an admiral's aide in the Naval Civil Engineering Corps. Bob has made three Southeast Asian tours and has received five medals, including the Purple Heart and the Navy Commendation with a combat "V"... Robert H. Jacoby has been promoted to first lieutenant in the U.S. Air Force. He is presently on duty at Cam Rahn Bay, Vietnam and is an aircraft maintenance

officer. . . Joseph J. Osvald writes: "In June. 1969, I received my Master's Degree in Systems Science from the Polytechnic Institute of Brooklyn (N.Y.). I am still employed at the Knolls Atomic Power Laboratory in Schenectady, N.Y. as a technical team leader."... Other members of the class who are in the Armed Forces are: Air Force Capt. Francis J. Pinhack, Jr., presently stationed at Otis AFB, Mass. and the recipient of three Distinguished Flying Crosses; Army Capt. John M. Porter; and Navy Lt. Francis X. Watson who is presently stationed in Saigon with the Navy Corps of Engineers and who anticipates receiving his PhD degree in soils from Georgia Tech very shortly... Richard K. Seaver is a senior experimental engineer with Hamilton Standard in Windsor Locks, Conn... John J. Vytal is a research engineer at General Telephone & Electronics in Waltham, Mass. . . Navy Lt. John F. Kelley, III, is now stationed in Washington, D.C. as a member of the Civil Engineer Corps.

Russell W. Morey has accepted a position as an industrial engineer with Honeywell, Inc. in Lawrence, Mass... Bechtel Corp. of San Francisco reports that Charles W. Pike is now a design engineer for them. . . Stuart R. Roselle is an engineer with Union Camp Corp. in Savannah, Ga. . . Robert E. Shaw is in Worcester working as a research engineer for Norton Co. . . 2/Lt. Robert W. Trefry is stationed at Lowry AFB, Colo...Capt. David E. Wilson is with the U.S. Army in Saigon... Robert S. Sternschein is a management trainee with General Electric Co. in Erie, Pa. Bob plans to receive an MS degree in Industrial Engineering from Northeastern in June, 1970... Bertis H. Adams, III is a design engineer for Charles T. Main, Inc. in Boston, Mass. . . Fred T. Erskine, 111, MS, is an instructor at Cushing Academy in Ashburnham, Mass. . . Teradyne, Inc. of Boston employs Alan P. George as an applications engineer... Richard B. Leon received his master's degree from WPI in June of 1969 and is presently employed by Eastman Kodak Co. in Rochester, N.Y. as a process engineer... Also a process engineer is Richard W. Mason. He is employed by Corning Glass Works in Medfield, Mass... John K. Wright is a sales representative for Stauffer Chemical Co. in New York City. J.K. lives in New Canaan, Conn. . . Ernest J. Kunz, Jr. is an industrial salesman for Humble Oil Co. He lives in N. Kingston, R.I. . . 1/Lt. Earl C. Sparks, III, is a staff officer with the Army's Combat Development Command - Institute of Land Combat in Alexandria, Va. . . Ens. Malcolm C. White, Jr., is stationed aboard the Naval ship, USS Massey. . . 1/Lt. Robert D. Wilson is stationed in Gelnhausen, Germany, working as an Army Technical Supply Officer.

Married: John C. Boutet to Miss Jane Ann Chad of Leicester, Mass., on June 21, 1969. John, who also holds an MS from M.I.T., is with Eastman Kodak in Rochester, N.Y... John B. Feldman to Miss Sharon Lois Sinel of Brighton, Mass., recently. John received his MS from the University of Pennsylvania and is employed by the Aircraft Engine Div. of General Electric in Lynn, Mass... Dana C. Finlayson to Miss Cynthia Jacoby of W. Falmouth, Mass., on June 7, 1969. Dana has his own private alumni association composed of his father, Frank S., '31, his two uncles, Kenneth M., '27, and Robert K., '34, and his brother. David F., '61. Dana's employer is Hewlett-Packard in Waltham, Mass... Arnold R. Miller to Miss Freyda Nancy Greenberg of Quincy, Mass., on August 31, 1969. Mitchell P. Koziol was among the ushers. Arnold is an electronics engineer with Bliss-Eagle Signal Co. in Davenport, Iowa. . . Joseph M. Archambeault to Miss Gail A. Ciak of Webster, Mass., on August 30, 1969. Francis P. Archambeault, '69, was his brother's best man. Joe is presently a graduate student in the E.E. Dept. at WPI. . . Bradford A. Johnson to Miss Judy Ann Hosley of Long Lake, N.Y. on August 24, 1969. Since graduation, Brad has received a master of engineering degree from the University of Akron (Ohio), and he is currently employed as an aeromechanical R&D engineer by Goodyear Aerospace Corp., Akron, Ohio.

John L. Kilguss is a mathematician with Bell Telephone Labs in Denver, Colo. He makes his home in Boulder. . . Rene B. La-Pierre has been commissioned a second lieutenant in the U.S. Air Force. He has been assigned to Mather AFB, Calif., for navigator training... Warren L. Clark is a graduate student in the physics department at WPI, . . Carmen M. Della Vecchia has been promoted to first lieutenant in the U.S. Air Force. Carmen is an electronics engineer at Kelly AFB, Texas... Bhoopen K. Kurani, MS, is employed by Sumner Schein Architect in Boston as a design engineer. . . Springfield (Mass.) Technical Community College has appointed Stephen J. Lak, Jr., MS, a mechanical technology instructor...1/Lt. Richard A. Symonds, USA, is stationed in Vietnam. . . The Badger Co., Inc. employs William E. Tanzer as a project engineer in Cambridge, Mass. . . Robert V. D'Elia is a hose designer for Goodyear Tire & Rubber Co. in Akron, Ohio. . . Raymond J. Fortin, who received a master's degree from the University of Pennsylvania last year, is presently a member of the technical staff at The Mitre Corp., Bedford, Mass. . . William W. Goudie remains with E. I. duPont deNemours & Co., Inc., but he is now working in Linden, N.J. at the Grasselli Plant...

Clinton A. Inglee is a sales engineer for the Torrington Co. in Philadelphia, Pa. . . Kenneth H. Rex, who received his master's degree in astronomy from RPI last year, still remains at RPI and is doing further graduate work. . . Raymond C. Rogers is a member of the industrial engineering staff at Texas Instruments, Inc. in Attleboro, Mass. Ray received a master's degree from Northeastern University last year in industrial engineering... Eastman Kodak Co., Rochester, N.Y., has Matthew R. Sinasky, MS, as an applications analyst. . . John E. Sonne is a technical assistant at the University of Pennsylvania Hospital in Philadelphia, John received a master's degree in biomedical engineering from Drexel Institute of Technology in June of 1969. . . Peter N. Formica is a research associate in the Regional Planning Div. of Travelers Research Corp. in Hartford, Conn... Joel B. Kameron is an instructor of psychology at Paterson State College in Wayne, N.J... 1/Lt. John E. Rogozenski, Jr., wrote us the following in November, 1969: "Finishing up my tour with the U.S. Army in January, 1970. I am then heading back to UMass graduate school to get an MS degree in industrial engineering."

1968

Married: Ens. Alan J. Blanchard to Miss Donna Marie Portelance of Sutton, Mass., on July 19, 1969. The best man was Raymond F. Racine, and David A. Swercewski was one of the ushers. The couple will live in Washington, D.C., where Alan is stationed at the Naval Observatory... Edward H. Borgeson to Miss Trudy Carol Hood of Wakefield, Mass., on June 28, 1969. Ed is employed by Raytheon Corp. in Wayland, Mass. . . Jeffrey A. Decker to Miss Elsie Marie Brennan of Worcester, Mass., on June 15, 1969. Among the ushers were Frederick G. Thumm, '67, Paul F. McDonagh, '67, James L. Viele, '67, and Jeffrey C. Knapp, '69. Jeff is presently on duty as a 2nd lieutenant in the U.S. Army at Fort Sill, Okla... George K. Fairbanks to Miss Barbara Jean Connal of Brewster, N.Y., on August 30, 1969. George is an electrical engineer at Sikorsky Aircraft, Stratford, Conn... William J. Giokas to Miss Linda Louise Pikula of Chicopee, Mass., on July 12, 1969. Andrew J. Giokas, '70, was his brother's best man, and one of the ushers was Eugene L. Murphy. Bill is a law student at Western New England College and teaches math at Enfield (Conn.) High School. . . Francis W. Maher, Jr. to Miss Judith Fitzgerald of Hartford, Conn., on August 5, 1969. Bruce G. Lovelace was the best man, and one of the ushers was Richard A. Symonds, '67. Frank is an electrical engineer with Pratt & Whitney Div. of United

Aircraft Corp. in E. Hartford, Conn. . . Lt. Michael A. Sills, U.S.A., to Miss Claire Regina Morris of Hamden, Conn., on July 12, 1969. Among the ushers were Roger P. Sepso and Edward B. Pero, '66. Mike is an instructor in missile engineering at Ft. Bliss, Tex... James F. Sinnamon to Miss Catherine A. Dawson of Methuen, Mass., on August 23, 1969. Rafik E. Kathiwalla was best man. . . Lt. Michael J. True, U.S.A., to Miss Eleanor Victoria Pekar of Hamden, Conn., on July 12, 1969. Among the ushers were Jack S. Siegel and Gregory F. Wirzbicki. . . Harold T. Gentile to Miss Kathleen M. Eldridge of Chatham Port, Mass., in June of 1969. Among the ushers was Cameron P. Boyd, '69. Harold is employed by Jackson and Moreland, Inc. in Boston, and he is working toward a master's degree at Northeastern University... Robert J. Collette to Miss Diane M. Gilmartin of Worcester, Mass., on August 3, 1969. Bob is a burner and fuel engineer for Combustion, Engineering, Inc. in Windsor, Conn... Lt. Ronald D. Rehkamp to Miss Susan Ann Slager of Oakville, Conn. on August 24, 1969. John C. De Meo was best man. . . Richard J. Scaia to Miss Linda Anne Hudak of Torrington, Conn. on October 25, 1969.

Born: To Mr. and Mrs. Ronald E. Jodoin, a son, Jeffrey Charles, on March 29, 1969. Ron is a graduate student in the department of physics and astronomy at the University of Rochester (N.Y.).

George F. Gamache is a graduate student in the civil engineering department at Tech...Joseph F. Hilyard is employed by the Hamilton Standard Div. of United Aircraft Corp. as a Systems Engineer. . . Walter C. Lynick is with the U.S. Army in Lai Khe, Vietnam, and is serving as an engineering equipment repairman... The Naval Air Engineering Center, Ground Support Equipment Dept., in Philadelphia has David R. Martin as a mechanical engineer...We have learned that Peter F. McKittrick is an engineer with Raytheon Co. in Bedford, Mass. . . Joseph L. Paquette has been transferred by the Dravo Corp. to Tampa, Fla., where he is an operations engineer... Jeffrey E. Shaw remains with Western Electric Co., but he is now working in Princeton, N.J. and living in Cranbury... George R. Skoglund is a graduate student at Colorado State Univ. in Ft. Collins, Colo... Francis L. Addessio received an MS degree in mechanical engineering from Stanford University in August, 1969. He is now employed as a member of the technical staff at Bell Telephone Labs in Whippany, N.J... David E. Andersen is a second lieutenant in the U.S. Army and is stationed at Fort Belvoir, Va... 2/Lt. Robert H. deFlesco, Jr. writes: "On August 8, 1969, I received my master's degree in mechanical engineering from Purdue Univer-

sity. I am currently attending the Field Artillery Officer Basic Course at Fort Sill. Okla. On January 29, 1970, I will leave for South Vietnam."... 2/Lt. Robert J. Gallo is stationed in Hawaii with the Army Corps of Engineers. He is assigned to Hickam Air Force Base as an assistant project engineer...Other members of the class in the service are: Airman Charles A. Griffin (at Barksdale AFB, La. with the Strategic Air Command); Army PFC Stephen M. Holub (with the Military Police at Fort Dix, N.J.); and Army 1/Lt. Robert Meader (in Vietnam)...Philip A. Mattson is currently at Officer's Candidate School in Newport, R.I. . . Donald B. Holden is a staff engineer for Goodyear Tire & Rubber Co. in N. Chicago, III. . . Michael R. Latina is a graduate student at Brown University in Providence, R.I...J. Kevin Sullivan is a sales engineer for The Torrington Co., Torrington, Conn... Ens. John M. Burns has recently attended the Navy's Civil Engineering Corps Officer School in Port Hueneme, Calif. . . Victor V. Calabretta, Jr. has recently attended Officer Candidate School in Newport, R.I... Westinghouse Electric Corp. employs William E. Catterall, Jr. in their Aerospace Div. in Baltimore, Md. as an associate engineer... Army 2/Lt. Bruce A. Denson has been assigned to Fort Leonard Wood, Mo. He was employed by the Oxford (Mass.) Public School System before entering the service... Robert D. Hickey is a programming analyst for General Electric Co. in Phoenix, Ariz. . . Army 2/Lt. Chester J. Kasper is currently stationed in Germany... Also in the Army is 2/Lt. Russell B. Snyder. He is stationed at Fire Island, Alaska... Dr. Roger L. Ludin, MS, is doing post-doctoral research work at WPI... David F. Moore has accepted a position as a salesman with Shell Oil Co. in Boston... Wayne L. Pierce is employed by Esso Research & Development Co. in Florham Park, N.J. as an engineer. . . Roger P. Sepso is a design engineer for Sikorsky Aircraft in Stratford, Conn.

1969

Married: Gregory B. Enz to Miss Linda Diane Charlesworth of S. Attleboro, Mass. on August 30, 1969. Stephen O. Rogers was an usher. Greg is employed by the New England Telephone Co. in Boston... Joseph A. Senecal to Miss Linda M. Renzi of Marlboro, Mass. on August 16, 1969. Among the ushers was Jerry L. Johnson. They are living in Palo Alto, Calif. while Joe attends graduate school at Stanford University... Richard H. Gurske to Miss Andrea Leigh Herrmann of W. Boylston, Mass. on June 7, 1969. Among the ushers was Henry E. McGuire, '68. Rick is employed as a

sanitary engineering assistant by the City of Los Angeles, Calif... Charles F. Robinson to Miss Janet Elaine Miller of Franklin, Mass. on July 26, 1969. He is employed as an engineering service specialist by The Foxboro Co., Foxboro, Mass. They are making their home in N. Attleboro, Mass.

Dr. David W. Clark, PhD, is a senior research chemist for General Motors Corp. in Indianapolis, Ind. . . Riegel Paper Corp., Riegelwood, N.C., employs two members of the class, Ralph N. Clemons and Raymond H. Barrows. They are members of the Technical Service group in the Technical Dept., and they both live in Wilmington, N.C. . . Stephen D. Cope, Jr. has accepted a field engineering position in the Installation and Service Engineering Dept. of General Electric Co. in Schenectady, N.Y... We have been informed that John B. Czajkowski is a test engineer for Colt Industries. Inc., in W. Hartford, Conn... Ralph J. Eschborn, II, is an engineer with E. 1. duPont deNemours & Co., Inc. in Antioch, Calif... Raytheon Co. Radar Systems Section in Bedford, Mass. employs Michael M. Hart as an associate engineer... Roy C. Johnson, Jr., MS, is a graduate fellow in the department of civil engineering at Rice University in Houston, Texas... Another member of the class attending graduate school is Robert P. Kusy. He is enrolled in the metallurgy department of Drexel Institute of Technology in Philadelphia, Pa. . . John Hancock Mutual Life Insurance Co. in Boston employs Stephen H. Legomsky as an actuarial assistant... Bhupendra A. Parikh, MS, is in Cleveland, Ohio working as a design engineer for C. A. Litzler Co., Inc. . . Stephen E. Platz is a graduate student in the computer science department at WPI... We have learned that Stephen O. Rogers is employed by E. I. duPont deNemours & Co., Inc. in Gibbstown, N.J. Steve lives in Glassboro, N.J... Pvt. Robert J. Scott is stationed at Fort Dix, N.J... Michael J. Cohen is a mathematics teacher in the Ellington (Conn.) School System. . . Michael Gan is a mechanical design engineer for Pratt & Whitney Aircraft in E. Hartford, Conn... MIT's Civil Engineering dept. has Edward A. Mierzejewski as a research assistant...We have learned that Alvin B. Pauly is a project engineer for Westvaco Corp., Luke, Md. . . Daniel C. Pond is an associate engineer in the applied physics lab at Johns Hopkins University in Silver Spring, Md. Also employed in the same lab is Donald L. Sharp... Paul S. Wolf is working for the Washington, D.C. Dept. of Highways and Traffic in their traffic engineering and operations division... Joseph Woo-Tien Wu, MS, is now in the chemistry department at the University of Pennsylvania in Philadelphia.

REUNION WEEKEND JUNE 6-7, 1970

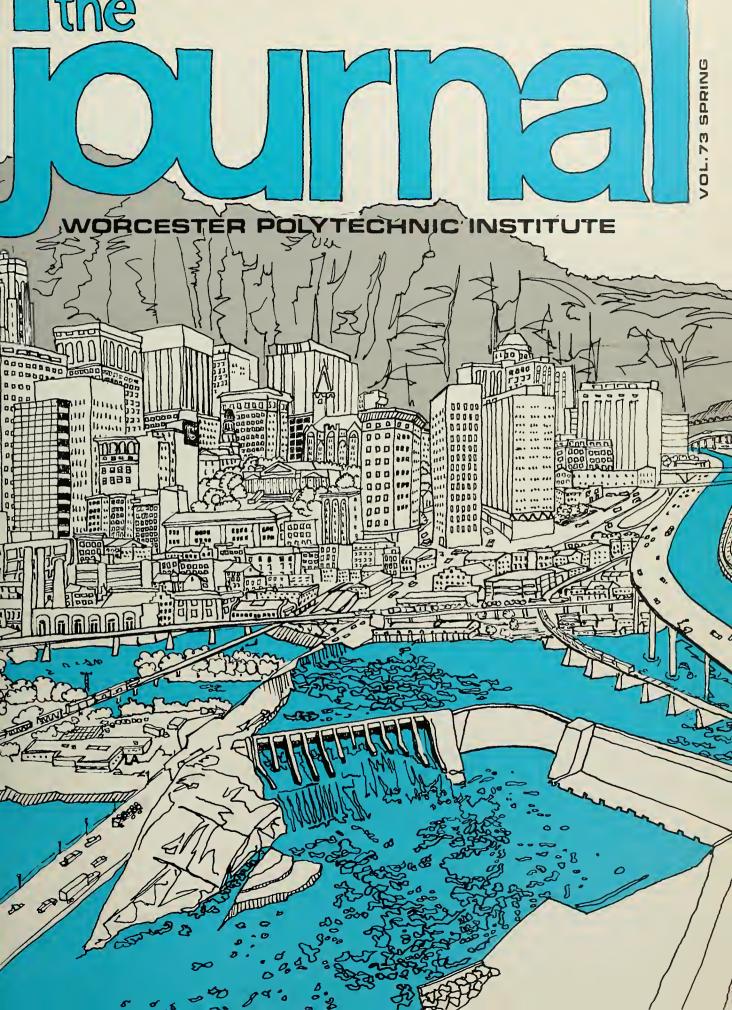
Reunion Day-Saturday, June 6

Commencement-Sunday, June 7

	Holding Reunions	Classes
WHY NOT PLAN	1940	1911
WHI NOT PLAN	1945	1912
NOW TO	1954	1913
AGVENING	1955	1920
ATTEND?	1956	1925
	1957	1930
	1958	1935

		SPRING	G A	THLE	ric :	SC	HEDULES		
		VARSITY BASEBALL					VARSITY TENNIS		
April	11	M.I.T. (doubleheader)	Α	1:00 p.m.	April	11	R.P.I.	Н	2:00 p.m.
	15	Northeastern	Α	3:00 p.m.		16	Assumption	Н	2:00 p.m.
	18	Assumption	Α	2:00 p.m.		18	Bentley	Α	2:00 p.m.
	21	Suffolk	Н	3:00 p.m.		22	Holy Cross	Α	2:00 p.m.
	25	Coast Guard	Н	1:00 p.m.		25	Babson	Α	2:00 p.m.
	30	Tufts	Α	3:00 p.m.	May	2	Coast Guard	Α	2:00 p.m.
May	2	Brandeis	Н	2:00 p.m.		5	Clark	Α	2:00 p.m.
	7	Hartford U.	Н	3:00 p.m.		11	A.I.C.	Н	2:00 p.m.
	9	Trinity	Α	2:00 p.m.		13	Lowell	Α	3:00 p.m.
	11	Clark	Н	3:30 p.m.			FRESHMAN TENNIS		
	13	Lowell	Н	3:30 p.m.	April	15	Leicester Jr. College	Н	2:00 p.m.
	16	A.I.C.	Н	2:00 p.m.	Дріп	24	Dean Jr. College	н	2:00 p.m.
						30	Worcester Jr. College	н	2:00 p.m.
		VARSITY TRACK			May	4	Clark	Α	2:00 p.m.
April	11	Middlebury	Н	2:00 p.m.			VARSITY GOLF		
	17	Nichols, Bentley	Н	4:00 p.m.	April	6	Bentley	Α	2:00 p.m.
	25	Norwich, Colby	Α		Apm	16	Trinity	A	2:00 p.m.
	29	Amherst, R.P.I.	Α	3:30 p.m.		21	A.I.C.	Н	2:00 p.m.
May	2	Bridgeport, Coast Guard	Α	2:00 p.m.		24	Providence	A	2:00 p.m.
	6	Tufts	Α	3:30 p.m.		27	Assumption, Holy Cross	A	2.00 p.m.
	9	Assumption, Clark	Н	1:30 p.m.	Mav	1	Clark, Tufts	Н	2:00 p.m.
	12	Trinity	Α	3:30 p.m.	ividy	4	M.I.T., U. Mass.	A	1:30 p.m.
						12	Lowell, Coast Guard	Н	2:00 p.m.
		FRESHMAN TRACK				15	Springfield	Н	2:00 p.m.
April	15	Assumption Prep.	Н	4:15 p.m.			FRESHMAN GOLF		
7,0.11	23	Worcester Academy	Α	4:00 p.m.	April	17	Worcester Academy	Н	2:00 p.m.
May	6	Tufts	Α	3:30 p.m.		27	Winchendon School	Α	1:30 p.m.
,,,,,	12	Trinity	Α	3:30 p.m.	May	4	Leicester Jr. College	Α	1:00 p.m.

And "grooving" is just one way Norton has made Even at moderate speeds, on a wet highway, the wheels of a car may not touch the road. They ride our world a little safer to live in. We're the people who make a product used for up on a film of water like a surfboard on a wave. insulation in heating elements in your electric stove; This "hydroplaning" effect can send cars spininvented an energy absorbing resin that could be ning helplessly out of control. That's why Norton has developed the first used for safety padding in your car; equipment designed expressly for "grooving" highsupply the basic and finished mateways and airport runways. A machine that cuts into rials used in floors, stairs and ramps the surface to allow water to flow off. Thereby prothat keep you from slipping. Norton Company world-wide: where you viding better traction. can expect the unexpected. safer stops and starts. Norton Company, Worcester, Mass. 01606 EXPECT THE UNEXPECTED FROM NORTON A GROOVY MACHINE THAT KEEPS CARS FROM SKIDDING.





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In This Issue

Alumni Fund Progress Report

In Memory

Campus Notes

Two Towers, Part IV: A Plan After more than a year of work, the Planning Committee has submitted its plan for the future of WPI. Alden Research Laboratories By Lawrence C. Neale, '40, Director, Alden Research Laboratories page eleven Prof. Neale explains some of the areas of research being conducted at this nationally and internationally famous facility. page fifteen **Faculty Promotions Announced** WPI Enters Race In this day and age of anti-pollution efforts, WPI will enter a number of minimum pollution cars in the Great Electric Car Race from Massachusetts to California. A Letter From Your Alumni Association President page twenty By Robert E. Higgs, '40 President Higgs clarifies the proposed reorganization of the Alumni Association. Financial Aid Based on "Need" By Edgar F. Heselbarth, Director of Financial Aid page twenty-three With expenses for undergraduates at WPI continually rising, financial aid becomes more and more important. In an informative article, Mr. Heselbarth describes how WPI awards financial aid. Board of Trustees Meet Dr. Hazzard's message to the Trustees is included in this article along with the announcement that a new Computer Science program has been approved. **DEPARTMENTS** Campus Notes Varsity Review **An Alumnus Comments Alumni Council Meets** Trustees Nominated

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THE FUTURE OF TWO TOWERS

PART IV:

A PLAN

Formed in December, 1968, to develop long-range goals and plans for WPI during its second century of existence, the Faculty Planning Committee has submitted four reports to the WPI community since that date. The most recent of these reports, *The Future of Two Towers, Part IV: A Plan*, was presented on April 20, 1970, after many months of hard and time-consuming work, not only by the Planning Committee, but by a large number of volunteers from the WPI Community.

In March, 1969, the Planning Group submitted its first report which contained a preliminary schedule of the planning operation, a partial analysis of the present status of the college, and twelve possible objectives for the college. The report emphasized that WPI should commit itself to a single objective and establish effective quality control procedures by June, 1970. In April, 1969, Planning Day I was held, a day without classes which was devoted to discussions about the future of the college. It was attended by 10% of the student body and by 80% of the faculty.

In June, 1969, the Planning Committee, supported by the activities of Planning Day I, completed a second report. It contained a discussion of Planning Day I and a further discussion of the twelve possible objectives for the college as outlined in the original report. It paved the way for *Two Towers III: a Model*, which was completed in October, 1969.

A key item which was necessary for the completion of the Plan was the approval of an ultimate goal of the college. This was presented and endorsed by the faculty in December, 1969, and is the foundation of the entire plan. It reads as follows: "It is the goal of the Worcester Polytechnic Institute to bring into the second century of its existence a new, dynamic version of its 'Two Towers' tradition.

"By means of coordinated programs tailored to the needs of the individual student, it is the fundamental purpose of WPI to impart to the student an understanding

of a sector of science and technology and a mature understanding of himself and the needs of the people around him. The WPI student, from the beginning of his undergraduate education, should demonstrate that he can learn on his own, that he can translate his learning into worthwhile action, and that he is thoroughly aware of the interrelationships among basic knowledge, technological advance, and human need. A WPI education should develop in the student a strong degree of self-confidence, an awareness of the community beyond himself, and an intellectual restlessness that spurs him to continued learning."

In formulating the plan, the Committee recognized the need to find a balance between education and training and that WPI should recognize the need for more of a sociological orientation to its technically-oriented curriculum. Thus the Committee concluded that "The temporal nature of 'training' means that the training aspects of higher education must lean much more heavily on the analysis of problems than on how to do specific things."

The following are excerpts from the Plan:

Characteristics

The Plan for WPI is designed to meet the goal of the college to impart to the individual student an understanding of a sector of science and technology and a mature understanding of himself and the needs of the people around him.

It is structured so that the student himself would be responsible and accountable for his life style and for his becoming educated. The Plan requires that the student, supported by excellent instruction and an effective advisory system, demonstrate that he can learn on his own, that he can translate learning into worthwhile action, and that he has become aware of the interrelationships among basic knowledge, technology, and human need.

The Plan is flexible enough to accommodate the varying backgrounds, needs, and maturities of students. With its innovations and sound academic approach, it is a justifiable and exciting undertaking for an independent college of engineering and science. It would create a community where both the student and the faculty member would find about them a group of people enjoying learning and attempting to solve some of the most difficult problems of the time.

The Educational Program

Each student's academic program would consist of a mixture of *Independent-Studies/Projects, Studies,* and *Study-Conferences* selected to meet his individual goal and the College's degree requirements. The Committee has defined these three areas as follows:

- a) Independent-Studies/Projects are a basic educational tool of the college requiring individually motivated study of a problem or sub-problem under the guidance of a staff member or an advanced student. Emphasis would be placed upon the student's learning what he needs to know to contribute to the solution of the overall problem. The investigation would culminate in a written report, possibly accompanied by an oral presentation, or a piece of equipment with a working manual.
- b) Study refers to a basic element of instruction which would involve, on the average, four class meetings and 13 hours of outside work for a total student commitment of about 17 hours per week for one term. A term is defined as a basic period of study which lasts seven weeks and includes 35 class days.
- c) Study-conferences, on the other hand, are a basic element of instruction which would involve, on the average, three hours of lecture, 2.5 hours of *Conference*, and 11-12 hours of outside work, for a total student commitment of about 17 hours per week for one term.

One of the most important aspects of the proposed educational program is that each student, in conjunction with his advisor, would structure his own program. Thus, in a very literal and practical sense, each student's course of study would be tailor-made for him, and he would have a large part in the tailoring process. The average WPI student, while concentrating in the scientific, technical, and sociological areas, would benefit most by establishing a minor in a humanities area to increase his personal perspective and ability to make reasonable judgments.

The overall educational program would be conducted as follows: *Studies* and the lecture portion of *Study-Conferences* would be given to relatively large groups (but less than 100 students) and would be formally scheduled.

The Conference portion of Study-Conferences, formally scheduled, and IS/P's would be conducted in small groups, providing for close personal contact between students and faculty.



Short "how-to-do-it" presentations would be available on demand to aid in acquiring specific techniques as needed.

The *Intersession* period of three weeks would be devoted to concentrated presentations of specific topics.

Some students would undoubtedly wish to follow programs similar to current departmental programs, and they could so allot their time; but the allocation of effort for traditional programs or for new combinations would vary for the average, above average, or for the outstanding student. Such a student-centered and flexible curriculum should develop self-reliance and responsibility in the student. This aspect, coupled with meaningful humanities and project work, would enable the WPI graduate to make real contributions to the society of which he becomes a part.

Undergraduate Degree Requirements

The Bachelor of Science degree from Worcester Polytechnic Institute would be awarded upon completion of the following:

- 1. A normal residence of 16 terms. Students with exceptional backgrounds or who would have demonstrated unusual accomplishments at WPI might, upon recommendation of the Council of Advisors, take their Comprehensive Examination before the completion of the normal 16 terms and receive their degree early if other requirements were met. In any case, however, early examination would not be recommended before completion of 8 units in residence.
- 2. Acceptable or Distinguished completion of a Comprehensive Examination in the major field of study. (Under the Plan, the now-existent 4.0 grading system would be abandoned and only the grades of Acceptable, Distinguished, or Unacceptable would be used).
- 3. Qualification in a minor field of study either by Sufficiency Examination or by overall evaluation of two units of work in the area. Students majoring in a scientific or engineering field would normally fulfill the requirement in a humanities area. Students majoring in a humanities area would normally fulfill this requirement in a scientific or engineering area.
- 4. At least two units established by Acceptable or Distinguished work in an advanced level activity involving Independent-Study or Project work. One of these units would have to be in the student's major field. An activity relating science or technology to society is recommended for the second unit. Examinations may not be substituted for this requirement.

Advisory Program

(One of the most discussed items concerning Part III: A Model was the extremely significant role which advisors would be required to carry. The Plan sees the advisor system as follows:)

. . . To Develop Long-range Goals And Plans For WPI

It would be the responsibility of the advisor to assist his advisees in defining their educational goals, and developing with them academic programs directed toward achieving those goals. The advisor would direct his advisees in their preparation for the *Comprehensive* and *Sufficiency Examinations* and would ultimately certify that they were ready for those examinations. Occasionally, he might have to recommend to the Council of Advisors that one of his advisees withdraw from the college.

The assignment of a faculty member to the role of advisor must be based on his interest in students, the diversity and depth of his knowledge, his commitment to the academic program, and on a thorough analysis of the way he could best contribute to the total educational program. The advising, of course, should be recognized as an integral part of the faculty member's teaching assignment.

The advisor for each student would be assigned when the student enrolls at WPI and the assignment would be made by the Dean's Office.

An important point in the program is that the advisor must gain an understanding of each of his advisees as soon as possible, not only to make an initial determination of the student's probable academic program, but also to be sensitive to changes in the student's attitudes and interests as he progresses.

Calendar

The Calendar recommended consists of four seven-week terms; a three-week January intersession for a series of special, intensive seminars; and an optional seven-week summer term.

Each term would consist of 35 class days followed by a recess of approximately five days. The first term would begin early in September; two terms would be completed before the Christmas recess of approximately two weeks; and the fourth term would be completed before the end of May. Three weeks would be provided throughout the year for comprehensive evaluation and program review.

Environmental Principles

A campus environment must be created to help the student assume the role of an adult in a community. This environment includes his total experience — his living, social life, and day-to-day relations with staff, fellow students, and Worcester community. The college would encourage each student to make his own decisions and be fully accountable for them and to develop and demonstrate his many capabilities. The environment would provide a congenial atmosphere for living, where the common campus morality would be good manners, not a set of rules. To the extent that the undergraduate population exceeds 1500, it would become increasingly difficult to provide the kind of environment needed.

Closer communication and interaction amongst students, faculty, and administration is felt to be an area of great importance if the college is to meet its stated goal. Along these lines, the Plan recommends, among other items, that dining is an important area of living and must be re-evaluated, that the students need versatile forms of housing, and that some form of campus center, which would be a central meeting place for students and faculty and administration, is urgently needed.

Graduate Studies

The graduate program should support the educational goal of WPI and should complement the undergraduate program. In considering the development of areas of graduate research emphasis or support, the governing criterion should be the relevance of the program to the goal of the college and to the education of our students. Programs that support this criterion should receive funding priority.

Only those graduate areas that show strong promise of significant self-support should be given Institute funding for development. Such funding should be sufficient to provide for realistic development, but it should be for a limited time period.

For the immediate future a large portion of the energies of the faculty should be devoted to implementing the proposed undergraduate program. In the meantime the present graduate program should be strengthened, but no major change in this program should be attempted concurrently with the changes in the undergraduate program.

It is expected that as the undergraduate program gains momentum, a multidisciplinary graduate interest and need would evolve. This interest and need should be developed into a graduate effort that meshes naturally with the undergraduate program.

Organizational Concepts

Generally, the administrative structure of colleges or universities is the responsibility of the boards of trustees and presidents with their administrative officers. The faculty should play an advisory role to insure that the administrative structure promotes the educational goal of the college. To this end, only those organizational concepts considered important to the functioning of the plan are considered.

The work of the present Dean of Faculty would be divided into two parts under a Dean of Academic Resources and a Dean of Program Operations. The two Deans would report to an Academic Vice President.

The Dean of Academic Resources would direct the faculty groupings, the library, the computation center, and consoritium instruction. Chairmen of faculty groups would report to the Dean of Academic Resources, would have primary responsibility for the recruitment and development of faculty, and should be appointed for renewable terms of service with the advice and consent of the faculty concerned. The faculty groupings must be flexible enough to sustain capabilities in areas where perhaps only one person with a particular disciplinary interest would be on campus. The groupings should encourage meaningful faculty and student interaction among engineer, science, humanities, and social science fields.

The Dean of Program Operations would be responsible for Study, Study-Conference, and Independent-Study/Project operations. He would, in co-operation with the Dean of Academic Resources, draw upon faculty from the academic resource groupings as needed.

A graduate program should be incorporated within the same organizational pattern. A co-ordinator of graduate studies should be appointed to serve the special needs of graduate efforts. He should report to the Dean of Program Operations.

The organizational structure should be integrated with the advisory system and with the faculty government outlined in the Constitution of the WPI faculty.

IMPLEMENTATION OF THE PLAN

A Suggested Calendar for Implementation of the Plan

1970-71: An Implementation Committee, consultants, and administration would develop complete plans for a pilot program, including the administrative structure, advisory procedures, allocation of faculty, generation of on-campus and off-campus projects, and utilization of the physical plant of WPI for both educational and living purposes. Concurrently, all departments would undertake a thorough study of the content of their course offerings in order to design new courses to meet the educational requirements of the new program.

1971-72: First year of pilot program. Some members of the faculty would be involved on a full-time basis, others on a part-time basis, working with approximately ten to fifteen percent of the undergraduate student body, proportionately distributed by classes, except for seniors.

1972-73: Pilot program would be considerably enlarged with the addition of a large portion of the entering class as well as upperclass transfers from the regular program. Approximately two-thirds of the faculty would be involved at least part-time.

1973-74: All faculty would be involved to some extent. Approximately two-thirds of the students would be under the new program.

1974-75: All entering students and most upperclassmen would be on the new program. Upperclassmen under existing programs could continue until graduation but no new students would be accepted under present graduation requirements.

Recommendations

- 1. A Dean of Program Operations should be appointed as soon as possible, and no later than September 1, 1970, to direct the development of a pilot program.
- 2. Each department at WPI should begin a detailed study of the content of its undergraduate program so that it can design new courses meeting the requirements of the Plan. This study should be completed no later than April 1, 1971.

- 3. WPI should seek the advice of consultants from industry, government, and other colleges and universities in the development of the pilot program.
- 4. WPI should appoint ten new faculty members, selected particularly because of the contributions they could make to the Plan as exemplified by their previous experience.
- 5. Upon adoption of the Plan by the faculty, the Admissions and Public Relations Offices should develop detailed brochures regarding the new academic program of the College and should embark upon an extensive campaign to educate guidance directors and other school officials regarding its operation.

Two Towers, Part IV: A Plan was presented to the faculty and staff on April 20, 1970. Since that time, a series of meetings and discussions have been held concerning the Plan and it is the hope of the committee that some definite decisions relative to the implementation of the Plan can be reached by mid-May, 1970.

The Journal has only attempted to summarize some of the important items contained in the Plan. (The original length of the Plan was 123 pages). Additional and more detailed information may be obtained by contacting the college. Your comments concerning the Plan are welcomed.





We are a group of alumni and friends formed to assist WPI Athletics. Our accomplishments to date have been:

Tutorial support to all student athletes desiring it. • Referral of student athletes to WPI. • Publication of a very well-received brochure—"Sports in Perspective"—(copies are available). • Seasonal mailings of athletic Newsletters. • Social gatherings at the various athletic events.

Solid growth has been experienced—(membership has doubled itself each year—over 150 members now).

1st year - 1967-68 74 members 2nd year - 1968-69 150 members 3rd year - 1969-70 Progress ahead of last year

WOULD YOU LIKE TO JOIN?

THE POLY CLUB

Sign me up as a member of THE POLY CLUB. Dues enclosed. \$25.00 Sustaining Member (Includes Season Pass to all W \$10.00 Participating Member	/PI home games, all sports)
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OLAVI H. HALTTUNEN, '45, NAMED WPI VICE PRESIDENT

Olavi H. Halttunen, '45, has accepted the recently created position of Vice President for University Relations. The new position is the top supervisory position in the areas of public and press relations, college development, fund raising, and the corporate associates program.

Prior to coming to WPI, Olle had been Vice President for Marketing at Jamesbury Corp., Worcester, and before that he was Director of Marketing at Cornell-Dubilier Electronics, a subsidiary of Federal Pacific Electric Co., in Newark, N. J. Most of his business experience, however, has been with General Electric Co., which he served in several marketing and management capacities throughout the country.

Mr. Halttunen attended Colby College before enrolling at WPI. His education was interrupted by three years service in the Navy during World War II, including duty in the South



Mr. Halttunen, '45

Pacific. He returned to WPI and was graduated with a bachelor of science degree in mechanical engineering.

In a statement announcing Mr. Halttunen's appointment, Dr. Hazzard said: "The tremendous financial pressures on private colleges offering quality education require the greatest possible efforts in locating support. Because of the unusual possibilities for contribution to modern society by our technologically educated graduates, we need creative new approaches to assure such support at WPI. The addition of Mr. Halttunen with his outstanding technical marketing experience will greatly strengthen our efforts in this area."

PROFESSOR GROGAN, '46, NAMED DEAN

Prof. William R. Grogan, '46, has been appointed to the newly-created post of Dean for Undergraduate Programs at Worcester Polytechnic Institute.

In his new post, Prof. Grogan will be responsible for the undergraduate curriculum and curricular program planning, summer school, and coordination of academic matters with the Worcester Consortium for Higher Education. He will continue to hold the rank of professor of electrical engineering when he begins his new duties on July 1.

In announcing the appointment, President George W. Hazzard said, "The planning, adoption, implementation, and management of undergraduate programs necessary for the fulfillment of our future educational goals will require a much greater effort than has been needed in the past. Prof. Grogan's service as chairman of the

faculty curriculum study committee and other activities in this area have been indicative of the special skills he brings to this important new post."

Prof. Grogan was graduated from WPI in 1946 and received his master's degree in 1949. He has been a member of the WPI faculty since 1946 and was promoted to full professor in 1962. He was the recipient of the 1969 Faculty Award, given annually for distinguished service and for distinguished excellence in teaching.



Professor Grogan, '46

PERSONNEL RELATIONS DIRECTOR NAMED

James R. Keskula has been appointed to the recently-created position of director of personnel relations for the college. In this new position, Mr. Keskula will be responsible for personnel relations with non-academic personnel employed by WPI. He will also be involved in the researching and coordinating of certain staff benefits for the faculty and professional staff.



One of the highlights of Earth Day, April 22 was a speech by Massachusetts Governor Sargent. Pictured here, left to right are: Pres. Hazzard, Worcester Mayor George A. Wells, Gov. Sargent, and Earth Day Chairman, Domenic J. Forcella, Jr., '70.

A graduate of Boston University, Mr. Keskula has a broad background in the personnel field. Immediately prior to joining WPI, he was manager of personnel and executive assistant to the president at Ty-Core, Inc., of Nashua, N.H. Prior to that he was associated with Massachusetts Institute of Technology and the Mitre Corp. in placement and personnel capacities along with spending three years in inventory control, purchasing, and personnel work at Reid-Meredith, Inc., of Lawrence, Mass.

GLEE CLUB TOUR A SUCCESS

The WPI Glee Club completed a tour during the week of March 30 which was termed a huge success by all involved. Under the direction of Prof. Louis Curran, the group made seven concert appearances in three cities in four days. Cities included on the tour were Cleveland, Pittsburgh, and Albany.

Arrangements for the various concerts were made by the local alumni chapter presidents and included setting up an evening concert for WPI alumni

and the public, plus an appearance at an assembly program in a local high school. In addition, a concert was presented at the General Electric Co.'s Research and Development Center in Schenectady, N.Y., arranged by Albert M. Demont, '31, and the group was given a tour of the facilities following the concert.

Although the evening concerts were presented to relatively small audiences, the Glee Club was extremely well received. Most alumni were impressed by the fine performance by the group and expressed satisfaction that the group was able to undertake a tour and to do so in such a professional manner.

TUITION INCREASES

As previously announced, tuition will be increased \$300 in September, 1970, to a total of \$2,400 annually. Faced with the rising costs of education, the increase places WPI at about the same tuition level as other private, technically-oriented colleges in the east.

In addition to tuition costs, an entering freshman in the fall of 1970 can expect to have the following expenses: board (\$580); room (\$375); books and supplies (\$130); social fee (\$20); accident and health insurance (\$35); and a room damage deposit (\$25). Although the room cost listed is only an average and can vary from \$325 to \$600, the average freshman in the fall of 1970 can expect to have expenses of \$3,665, exclusive of such items as travel, clothing, laundry, linen, and entertainment.

COMPUTER CENTER RECEIVES GRANT

WPI recently received a grant of \$220,000 from the National Science Foundation to support the Worcester Area College Computation Center which is located in Gordon Library. According to Norman E. Sondak, Director of the center, the grant will be used to pay salaries of personnel employed at the center. Presently, the center employs nine persons full-time, of whom five are professionals. No new personnel will be hired with the grant.

The center is used by about 15 colleges in the area and is used for computer science education, research in many areas, and by participating college administrations. The center supports engineering and scientific courses at WPI and other colleges as well as courses such as sociology, psychology, and geography at Clark. WPI and Clark are the major users of the center.

The center serves all the colleges participating in the Worcester Consortium for Higher Education, although it is not actually a part of the Consortium. Participating colleges from the greater Worcester area are Assumption, Anna Maria, Holy Cross, Worcester State, Becker Junior, Leicester Junior, Quinsigamond Community, Worcester Junior, Clark, and WPI.

PUB IS SUCCESSFUL

The Pub, located in the basement of Sanford Riley Hall, is now in its second full year of operation and has enjoyed a successful year. Formally created two years ago to promote closer communication between students and faculty on a social level, the Pub has a license to sell beer and wine. Memberships are available to any member of the WPI community 21 years of age or older.

The Pub currently has about 250 members with many of these being graduate students and faculty members. It is student-operated with two seniors, Randy Sablich of Seaford, N.Y., and Jim Bagaglio of Milford, Mass., managing it this year with Dean William F. Trask as their advisor. It is open only on Wednesday evenings and Friday afternoons.

BROAD RESIGNS

Frederick L. Broad, Jr., Director of Development at WPI since 1963, has accepted a position as Director of the Department of Public Information at Old Sturbridge Village in Sturbridge, Mass.

While at WPI, Mr. Broad was responsible for capital giving, deferred giving, foundation grants, and other methods of fund raising for the college. He supervised the successful Centennial Fund campaign from 1964-67 which resulted in contributions to WPI of over \$15 million.

According to an announcement from Old Sturbridge Village, the Department of Public Information is a new department, formed to better inform members and friends of the Village and the general public about the complete program and wide range

of activities and resources of the Village. Old Sturbridge Village is nationally known as a museum of early New England life and for its unique exhibits, but its function as an educational institution with the extensive programs and resources that this involves is not generally realized, and Mr. Broad will be responsible for promoting this educational area.

NCAA ELECTS PRITCHARD

Robert W. Pritchard, WPI's Director of Athletics and Head of the Physical Education Dept., was recently appointed a vice president of the National Collegiate Athletic Association. He succeeds Dolph Samborski as representative of District I, and he will also serve on the NCAA Council, which is the policy-making committee.

In another recent event, Pritchard was elected president of the New



The Student Government Social Committee sponsored Spree Day on April 16. Classes were called off at 9:00 a.m. and the remainder of the day was beer and bands on the quadrangle.



Construction on Stoddard Residence Center progresses about on schedule.

England Inter-Collegiate Amateur Athletic Association.

Pritchard has long been active in many athletic organizations, and his recent elections only serve to emphasize his popularity and competency in his field. He is a past president of the New England College Athletic Conference. He has served on three different Eastern College Athletic Conference committees and recently completed a four-year term on the ECAC executive committee. He is also a past chairman of the Quinsigamond Regatta Committee and currently serves on their board of directors.

He graduated from Susquehanna in 1936 and received his master of education degree from Penn State in 1940. He came to WPI as head football coach in 1947, a position he held for 20 years. He has been athletic director for the past 18 years.

HERRION APPOINTED

After serving as interim basketball coach for one year, James J. (Jim) Herrion has been appointed head basketball coach and assistant professor in the Department of Physical Education and Athletics, This past

season he directed the basketball team to its first winning season in 11 years, finishing the season with a record of 11-10 while winning six of the last seven games of the season. He has to be optimistic about next year, too, for only one member from this year's team will be graduating.

Herrion was a varsity basketball aide and a freshman coach at Holy Cross for three years, working under head coach Jack Donahue. He resigned in 1968 to become a guidance counselor at Tantasqua Regional High School in Sturbridge, Mass. While at Holy Cross, his freshman teams compiled a highly respectable 34-15 record. Prior to joining Holy Cross in 1965, he had been at Sacred Heart High School in Yonkers, N.Y. He had a varsity basketball record of 157-67 in 12 seasons at that school. He is the second former Holy Cross coach to cross the town to WPI. Melvin G. (Mel) Massucco, now associate professor in physical education and athletics. joined the WPI faculty in 1967 to become head football coach of the Engineers.

Bob Pritchard, who made the announcement of Herrion's appoint-

ment, said, "I am very happy that Jim Herrion has decided to accept the position in the Physical Education Department. He will be head basketball coach with other coaching duties in the Fall and Spring. He will also work with physical education classes as do all other members of the department.

"Jim served as interim head basketball coach for the last season and did an excellent job, concluding with a winning season. The winning season was climaxed with a double overtime win over arch rival Clark University.

"I am sure the members of the basketball squad will be pleased with this announcement. I think the association will be good for all concerned."

Herrion is a graduate of Iona College and has a master of arts in guidance in the secondary school from New York University. Presently living in Oxford, Mass., Herrion is married and the father of three boys.



Coach Herrion

ALDEN RESEARCH LABORATORIES

by LAWRENCE C. NEALE, '40

Director, Alden Research Laboratories

Editor's Note: In 1894, Prof. George I. Alden, then head of the Mechanical Engineering Dept. of Worcester Polytechnic Institute, foresaw a need for research in hydraulics and fluid mechanics. He selected a 240-acre site in Holden on a power privilege which had flowage rights to a 150-acre pond. Through his efforts, the site was given to the Institute and a laboratory constructed.

The laboratory was formally named the Alden Hydraulic Laboratory in 1915 when George Alden financed a meter station. Through gifts or grants from his trust fund after his death, additions to the facility were made in 1925, 1930, 1936, and 1937. Further generosity from his trust fund made possible the construction of the present main building in 1968.

The Alden Research Laboratories are operated as a separate research facility of WPI. Presently, its efforts are divided into four main work areas. The facility must first provide research facilities and instruction for graduate and undergraduate students studying at WPI. Second, the Laboratory provides services to industry in the area of flow calibration or flow studies of numerous devices used in pipe lines ranging in size from a fraction of an inch in diameter to 48 inches in diameter. The third area is concerned with naval ballistic studies associated with water entry, water exit or underwater studies.

Finally, the Laboratory has acquired a national and an international reputation in the area of model studies of rivers, dams, spillways, intakes,



Alden Research Laboratories Director Lawrence C. Neale, '40, discusses a project with Gordon T. Gurney, '41, a member of the Alden staff.

pumps, etc. In addition to a pump test facility, there are currently 30 models in existence or under construction at the Laboratory. Of these models ten are in the area of flow through structures, eight for pump storage projects, ten for heat rejection studies, and two miscellaneous studies.

In addition to the model studies, members of the staff are active participants on numerous national and international committees dealing in areas of fluid mechanics. This, in addition to consulting on numerous full-scale projects, helps the Laboratory staff stay abreast of current work in its field.

The following article by Prof. Neale explains some of the current areas of effort at the Laboratory.

The Alden Research Laboratories continue to develop in a number of areas that are of interest to many of our alumni and friends. In the instructional program, the staff is participating in a number of the new courses which are developing on the main campus. At least one staff member (Albert G. Ferron, '57) is participating in ES 102, the "Introduction to Science and Engineering" for freshmen, which has been extremely successful. Another member (Prof. Clifford H. Lantz) has been one of two faculty members responsible for the CM III "Environmental Engineering" course for freshmen. In addition, a new graduate course in Open Channel Flow is now being offered on a regular basis by a staff member (Prof. Peter A. Larsen). The usual courses of Elementary Fluid Mechanics, Power Plant Design, and Hydraulic Transients continue to be offered. With the availability of the new building at Alden, the laboratory experimental equipment for the undergraduate courses is gradually being updated and moved into the new experimental wing. The transfer to the new building of some student experiments is being developed to give the students the "feel" of the new building.

The space in what was our main building and is now our number 2 building is being utilized for other work, such as a graduate thesis in the old student laboratory. In connection with the old building, it should be noted that the 50,000-pound weighing tank scales are calibrated every six months, and on the basis of these calibrations, they continue to perform as a high precision instrument after 94 years of service. The flow capability has been increased with the addition of two centrifugal pumps so that maximum flow is now 22 cubic feet per second, a large increase over our early capabilities. Thus, it is apparent that building number 2 is being used at equally as high a level as at any time in its history.

In the new experimental wing of building number 1, a 100,000-pound weigh tank has now been put in service. This has been a major effort of all hands with special credit to Prof. Leslie J. Hooper, '24, Prof. Hobart H. Newell, '18, and Mr. Alden T. Roys, '40. The "shakedown" exercise is still going on but two complete calibrations have been carried out, and the excellent results on these initial runs predict a fine caliber of work in the future. Another project set up at present in the experimental wing of the new building is an example of the expanding interest of Alden Research Laboratories. A full-scale mock-up of the reactor cavity on an 880 MW unit is being studied to determine the cooling air flow distribution between the concrete and the insulating panels. The construction and testing on this experiment is being handled by Mr. Gordon T. Gurney, '41, a recent addition to the Alden staff. The flow measurement facilities are being utilized to the fullest extent possible by industry for both flow meter development and control and regulation studies for valve manufacturers.

A major portion of the Alden research effort is being directed toward service to the power industry and the research needs involved with the expanding installed capacity. Two . . . with a national and international reputation

main areas of interest, pumped storage and thermal pollution, are apparent from a review of our projects. The vital concern over heat dissipation from thermal electric plants has resulted in a number of river model-type studies being conducted. Over the past 17 years there have been 23 of these studies conducted for various power producers. At present there are five active studies being conducted at ARL. These are the Calvert Cliffs Nuclear Plant on Chesapeake Bay for the Baltimore Gas and Electric Co.; the Indian Point Nuclear Plant on the Hudson River for the Consolidated Edison Co. of New York; the Peach Bottom Nuclear Plant on the Susquehanna River for the Philadelphia Electric Co.; the Fitzpatrick Nuclear Station on Lake Ontario for the Power Authority of the State of New York; and the Chalk Point Plant on the Patuxent River for the Potomac Electric Power Co. In each of these studies, the basic goal is to minimize the effect of the heated condenser water discharge on the receiving body of water. The ARL part in this effort is to define the flow patterns of the warm water being discharged to develop data in a form to allow decisions by the ecologist, on the biological effects, and by the design/operating engineer, on the performance. In developing a test program to satisfy our goals, the type



Professor Neale and Albert G. Ferron, '57, discuss a project.

of structures involved, the modes of operation of the plant, the receiving body conditions, and other pertinent aspects are all integrated into the model. Thus, comparisons of plant operations, structural modifications, and other pertinent parameters can be made.

In terms of size and scope, these models are of interest. In order to model 34 miles of Chesapeake Bay at a scale of 1/1000, the Calvert Cliffs model is over 200 feet long and averages 60 feet in width. Controls at three boundaries of the model provide the correct tidal flow variation and water surface change automatically and continuously. It should be pointed out that the time scale is such that a 12½ hour tide cycle is reproduced in 7½ minutes. Also, in terms of scaling,

the temperature variations are modeled at 1 to 1, which means that a 1° F, change in the field is reproduced by a 1° F, change in the model. These tidal models are basically self-contained, in that a sump is provided and tidal-river flows are pumped from the sump to provide the correct tidal flows. The sump affords the possibility to maintain any required river or estuary temperature such as winter condition of 32° F, or a summer temperature near 90° F.

In terms of data retrieval, the later models provide some interesting changes from earlier installations. In the Indian Point model a data retrieval system is installed for 300 individual temperatures. The system is able to survey these 300 points in 15 seconds total. The data is printed on paper

tape and simultaneously digitalizes the data and records it on magnetic tape. The tape can, in turn, be used in computer techniques and permits data reduction as well as computer controlled plots of the data.

Pumped storage is another interesting new aspect of the Alden Research Laboratory modeling task. The model study is usually concerned with the flow patterns in the upper reservoir and the possible formation of vortex flow in the immediate vicinity of the intake structure. A case in point is the model of the newly-announced Bear Swamp development on the Deerfield River in Massachusetts. The entire upper reservoir has been modeled at ARL to a scale of 1/50 to study the intake. In addition to studies to eliminate vortex flow, assurance must be

developed that no large blocks of ice can be withdrawn from the reservoir. The entire reservoir is modeled, since early studies have shown that the patterns of flow developed in the reservoir are critical to the accurate modeling of flow near the intake. Other areas of study on this model include head loss and rock trap problems.

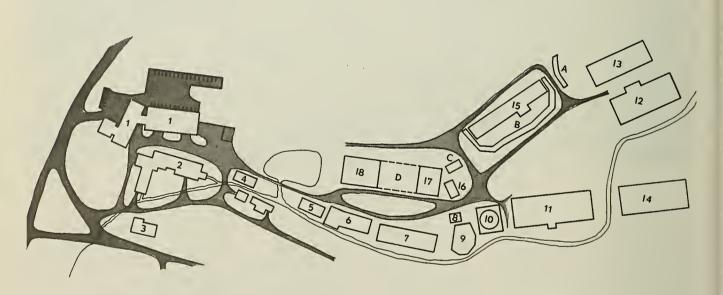
In still another area the pump test facility is now fully operative with two loops available under the supervision of Mr. Frazier P. Colon, MS '68. One loop is a 40 HP constant speed stand for centrifugal pumps. This loop is designed basically for developmental type studies and incorporates a cradled

drive, a calibrated venturi meter, and associated speed and head measurement equipment, all arranged to take advantage of a concrete sump $40' \times 5' \times 8'$ in volume.

The second loop is a 100 HP variable speed installation for vertical-type pumps. The loop incorporates a calibrated venturi meter and basic water columns for head measurement. A diesel-driven DC generator provides power to the variable speed DC drive. Model pumps with as much as a 12" diameter have been tested in this loop. This facility is set up entirely in building number 6, which also is arranged to test pump well intakes and similar structures.

A series of tests have been conducted this past winter on a 40 HP gear drive for a water treatment system. An interesting aspect of the tests has been the use on a sponsored project of an Alden Dynamometer for the first time in over 30 years. The dynamometer has performed so well that the client has indicated an interest to purchase such a unit.

These are some of the highlights of the present activities at Alden Research Laboratories. The Laboratories are open for visitation and inspection and a visit will certainly provide a more complete picture of the current status of our instructional and research activities.



ALDEN RESEARCH LABORATORIES

1- New Lab Building	7- Chalk Paint	14- Gilboa	Area A-Oyster Creek
2- Old Lab Building	8- Riley Staker	15- Peach Bottam	Area B-Narthfield River
3- Low Head Lab	9- Pilgrim Wave Basin	16- Jacassee	Midland
4- Technician's Off.	10- Bear Swamp	17- Beaver Valley	Area C-Eastan Seabroak
5- Sammis I	11- Morgantawn		City af Madrid
Vermont Yankee	12- Calvert Cliffs	18- Indian Paint II Vt. Yankee Disch. Narthfield Intake	Area D-Ludingtan Carnwall Oyster Creek II
6- Faster Wheeler	13- Indian Paint III	Carnwall II	Oysier Cleek II

FACULTY PROMOTIONS ANNOUNCED

Eight faculty promotions were announced recently by M. Lawrence Price, '30, Vice President and Dean of the Faculty. The promotions will become effective July 1, 1970.

Professor

Promoted to professor of electrical engineering is Dr. Harit Majmudar. He received his BS degree from Banaras Hindu University in 1952 and his doctorate degree from Syracuse University in 1961. He joined the staff of WPI in 1964 as an associate professor and has written several articles and textbooks.

Associate Professor

Dr. Robert W. Fitzgerald, '53, has been promoted to associate professor of civil engineering. Dr. Fitzgerald received his bachelor's and master's degrees from WPI in 1953 and 1960, respectively. He recently received his doctorate degree from the University of Connecticut, and he has been an assistant professor at WPI since 1963.

John A. Mayer, Jr., has been promoted to associate professor of mechanical engineering. Prof. Mayer received his bachelor's degree from New York State Maritime College in 1954. He has earned two master's degrees, one in mechanical engineering from Columbia University in 1956 and one in nuclear engineering in 1962. He was an instructor and rose to be an associate professor at N.Y. State Maritime College before he joined the WPI faculty as an assistant professor in 1964.

Dr. Alfred A. Scala has been promoted to associate professor of chemistry. He received his bachelor's and master's degrees from Brooklyn College in 1957 and 1961, respectively, and received his PhD degree

from the Polytechnic Institute of Brooklyn in 1965. He came to WPI in 1966 as an assistant professor.

Dr. Kenneth Schoen has been promoted to associate professor of mathematics. Dr. Schoen received his doctorate degree in mathematics from the University of Pittsburgh in 1968. He had previously received a BA degree from the University of Connecticut in 1954, an AM degree in mathematics from Yale University in 1955, and an MS degree in engineering science from RPI in 1961. He joined the staff at WPI in 1968 as an assistant professor.

Dr. Stephen J. Weininger has been promoted to associate professor of chemistry. Dr. Weininger received a BA degree from Brooklyn College in 1957 and received his doctorate degree from the University of Pennsylvania in 1964. He then was a senior demonstrator at Durham University in England for a year before he joined the staff at WPI in 1965 as an assistant professor.

Assistant Professor

Warren E. Chase has been promoted to assistant professor of mathematics. He received a BS degree from Franklin & Marshall in 1956, and an MS degree from the University of New Hampshire in 1962. He was an instructor at WPI, 1962-63; a teaching assistant at Lehigh, 1963-64; an instructor at Albright College, 1964-65; and he returned to WPI in 1965 as an instructor.

George F. Riley has been promoted to assistant professor of physics. He joined the faculty at WPI in 1961 as an instructor after receiving a BS degree from Brown University in 1957 and an MS degree from the University of Maine in 1959. He was an instructor at the University of Maine from 1959-61.



Professor Majmudar



Professor Mayer



Professor Chase

"THE GASSER"

ENTERS RACE

WPI will be well represented when the second running of the Great Electric Car Race begins on August 19. About 60 WPI students, ranging from freshmen to graduate students, are involved in designing and producing six different minimum pollution automobiles for entry in the race.

The entire concept for a minimum pollution auto race began in 1968 when MIT and Cal Tech held an electric car challenge race. This year the same two schools decided to expand their race and invited entries from engineering students at other colleges in North America. At present, about 40 entries are expected. The race will run from Cambridge, Mass., to Pasadena, Calif.

The only design requirements are that the vehicles produce less pollution than the amount allowed by the State of California motor vehicle code which will go into effect in 1975. Entry requirements dictate that each entry must meet local requirements for vehicle registration, that certain design and performance tests must be passed before the cross country drive begins, and that each vehicle must be driven by a team of two registered college students.

The response to the project and challenge at WPI has been overwhelming. According to Roger R. Borden, MS '61, Professor of Mechanical Engineering and faculty advisor for the project, "When I first mentioned the project, I expected that there would be several students who would want to develop an entry. I was hardly prepared to find 60 men who would come up with six different designs. However, each team has come up with plans which are technically sound and quite practical as prototypes of new types of automotive power."

Planned entries from WPI include a reciprocating steam engine car, a steam turbine car, a gas turbine car, a natural gas car, a modified "conventional" engine car, and a hybrid-electric car, All of the entries are being adapted from conventional automobiles with only the necessary changes in the power plant and power train being made. Donation of automobiles has been made by at least one local auto dealer and support in terms of finances and/or parts has come from a wide range of sources. The Ford Motor Company and Mobil Oil Company, for example, are jointly sponsoring one entry, while Saab is sponsoring another entry.

"These men have already received considerable help and encouragement in the form of donated or loaned pieces of equipment," said Prof. Borden. "Other firms are providing equipment at cost. They'll also need funds

for operating and living expenses as the entries drive across the country in August. We've already had several offers of support from people who want to back a winner.

"I feel this is really a pilot pilot program for the Two Tower III program," Prof. Borden continued. "If the program is adopted this spring, there will probably be a pilot program with the project approach. The students involved in this project have worked under an advisor relationship, have sought outside help on their own, and have sought successfully assistance from other departments on the Hill. It's been a real learning procedure for all involved," he enthused.

And with the enthusiasm evident on the part of the students involved, as well as Prof. Borden, the prospect of the winner representing WPI would appear to be a distinct possibility.



"The Gasser," a natural gas powered car, is readied for display.



Basketball

Happiness is a winning season, and this is what Coach Jim Herrion's first WPI team achieved. Coming up with strong team efforts during the last half of the season, the team won its last four games and six of its last seven to finish with a record of 11-10, the first winning season in basketball in 11 years.

After starting the season quite strongly, the Engineers slumped about mid-season and, at one point, had a record of 5-9. Included in this were sound defeats at the hands of Boston University, 80-66, and Springfield College, 112-73. But at this point the hoopsters appeared to reach maturity as a team and went on to finish the season in an impressive style.

After the Springfield massacre, the team bounced back to defeat Bates 73-58. It was a solid team effort with excellent rebounding and a strong zone and zone trap press forcing numerous Bates turn-overs. The hoopsters then went on to defeat Trinity before suffering a minor setback in their quest for a winning season, losing to Colby.

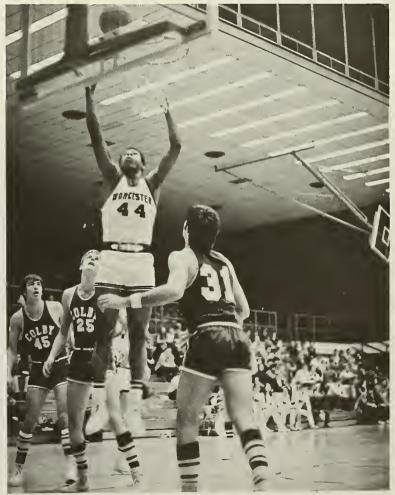
Against a weak Coast Guard team, the Engineers upped their record to 8-10 with a 76-51 victory, and talk suddenly centered around a winning season. Against Coast Guard, it was once again a team effort with four players scoring in double figures, led by junior co-captain Tim Rooney, '71, of Ludlow, Mass., with 17 points. Scoring an overwhelming victory over Suffolk University, 98-69, the Engineers upped their record to 9-10 and the possibility of a winning season appeared to center around the game with cross-town rival, Clark.

The Clark game was everything it had been built up to be. It was a

double overtime thriller with the score tied at 69-69 and 77-77 before reserve forward John O'Brien, '72, of Charlestown, Mass., canned an underhand layup with time running out to defeat Clark, 87-85. Sophomore center, 6'4" Jimmy Henderson, '72, of New Haven, Conn., was outstanding. He grabbed off 22 rebounds and was 9 for 11 from the floor, winding up with 20 points for the night.

Before a large and spirited crowd, the Herrion-men ended the season by defeating Brandeis University, 82-58, and thus won their fourth game in a row and finished the season with a winning record.

Coach Herrion did an outstanding job of building a winner in his first year as head coach. Not only did he produce a winning record, but he won six of his last seven games with an impressive display of team effort and desire. And the outlook for next year appears to be bright. Only one member of the squad graduates (Ollie Briggs of Rutland, Mass.), and it appeared as the season progressed that the freshman team might produce a few stars for the future. Freshmen with good talent included Bill lerardi of Hamden, Conn.; John MacDougall of Hopedale, Mass.; and Bob Zawada of Thompsonville, Conn.



Jim Henderson, '72, goes high to grab another rebound against Colby.

Wrestling

The wrestling team, coached by John Vino, finished their season with a record of five wins and five losses. After getting off to a slow start, losing two of their first three matches, the matmen came on strong to finish with a .500 record.

Outstanding all season long was co-captain Lenny Polizzotto, '70, of Westbury, N.Y., who finished the dual meet season undefeated, wrestling at 134 lbs. His varsity record at WPI was an amazing 35-4-1, and he scored a school record of 121 points during his career to break the record of 103 points held by Peter Grosch, '69. In the New Englands this year, Lenny, hampered by an injury, finished fourth in the 134-lb. weight class, a disappointment after finishing second in that weight division the previous year.

Early in February, the matmen defeated Tufts University by a score of 28-20 to bring their record to 3-2. This victory also brought them an eighth-place ranking in the New England wrestling conference. In their next match they brought their record to 4-2 as they destroyed cross-town rival Holy Cross, 43-3. The only points scored by Holy Cross came when heavyweight Art Geetersloh, '72, of Avon, Conn., lost a 3-2 decision.

The next two matches proved to be disappointments as the wrestlers dropped two heartbreakers to the University of Hartford by a score of 24-20 and to Brown University by an even closer score, 21-19.

The grapplers then lost to the University of Massachusetts, suffering their worst defeat of the season as they were buried 41-5. The only win-

ner for WPI was all-star Lenny Polizzotto, who pinned his opponent. The matmen finished their season and evened their record at 5-5 as they defeated Ivy League foe Dartmouth, 26-16.

At the New England Tournament held at Springfield College, the team placed 11th in a field of 28. In this meet a fine performance in the 167-lb. weight class was turned in by sophomore Jeff Petry, Greenlawn, N.Y.

"Last November I wasn't quite sure what kind of a team we would shape into, particularly after graduating five strong seniors who had scored a lot of points," commented Coach Vino. "The men worked hard to finish with a 5-5 record."

Gone next year, among others, will be record-setting Lenny Polizzotto. A strong array of young talent, however, will be returning. Included in this group are sophomores Jeff Petry, who had a 7-3 record this past season, and Ken Kolkebeck of Westbury, N.Y., who had a 5-5 record, along with junior Greg Dickson of Gouverneur, N.Y., who finished with a 6-4 record. This nucleus, plus a strong freshman group, give Coach Vino a bright outlook for next season.



Ned Cunningham, '71, lays in two against Brandeis as John O'Brien, '72, looks on.

Hockey

The WPI hockey team also had a successful year as they gained the play-offs in the Worcester City College Hockey League for the first time in five years.

Led by high-scoring sophomore "J. C." Tremblay of Waterville, Me., and defensemen Jim Risotti, a freshman from Marlborough, Mass., and junior co-captain Bob Johnson of W. Boylston, Mass., along with outstanding goal-tender George Gamache, the team used strong teamwork to gain their play-off berth.

The team entered the play-offs seeded fourth and finished in exactly that position, losing to both Holy Cross and Worcester State.

Swimming

The 1969-70 swimming team scored more victories than any other swim team in the history of WPI as they finished the season with a record of 6-2. They also scored a most impressive victory over Northeastern in a "practice" meet, to make Coach Carl Peterson's second season at WPI a memorable one.

After opening the season with two impressive victories, the mermen ran into an extremely strong Tufts University team and lost in a meet that was decided in the final event of the day, 54-41. The team bounced back, however, and easily defeated Babson as the free-style relay team broke the Babson pool record and, according to Coach Peterson, sophomore Randy Partridge of Braintree, Mass., had his best day ever in the diving event.

The swimmers lost their second and final meet of the year in their next outing as an outstanding Coast Guard team defeated them in a heartbreaker, 48-47. Senior co-captain Roger Johnson of Hamden, Conn., was outstanding in defeat as he broke his own

WPI record in the 200-yd. backstroke.

In what Coach Peterson termed the most gratifying win of the season, the team came back to defeat the University of Massachusetts for the first time in nine years and only the third time since 1933. The meet was decided in the last event as WPI won the final relay by less than one second to come out on top 52-43. Three school records were set on the way to victory, with sophomore John Loehmann of the Bronx, N.Y., leading the way with a new record in the individual medley.

The team finished the season with two easy victories over Brandeis and Lowell Tech to finish with a 6-2 record. In the "practice" meet with a strong Northeastern team, the team came up with their best performance of the year, according to Coach Peterson, as they prepared for the New England meet.

In the strongest showing by a WPI swim team since the days of Bob Rounds, '64, "We swam at the New England's the way we had been capable of swimming all year," said Coach Peterson. "We swam up to our potential there." The 400-yd. medley relay

team, although they did not reach the finals, broke their own WPI record by a full seven seconds. Sophomore Bruce Eteson of Worcester, lowered his own record in the 200-yd. breaststroke by two seconds, and the 400-yd. freestyle relay team of Dick Ellis, '72, of Gardner, Mass., senior co-captain Lou Zitnay of Stratford, Conn., Al Nafis, '72, of Hartford, Conn., and junior Tom Weil of Staten Island, N.Y., had an outstanding day, taking six seconds off the school record.

The freshman team wound up their season with a 3-3 record. Two outstanding prospects for next year's varsity are Fred Baker of Falmouth, Me., who was consistently faster than the varsity times in the backstroke, and Steve Johnson of Wethersfield, Conn. Two other potential prospects are Vern Hatt of Staffordville, Conn., and Steve Cole of Wethersfield, Conn., who, according to Coach Peterson, shared the freshman team award for most improvement.

Thus, with a strong freshman team and the loss of only four seniors, Coach Peterson is looking forward to an even better season next year.



Lenny Polizzotto pins his opponent.

To All WPI Alumni:

A LETTER FROM YOUR ALUMNI ASSOCIATION PRESIDENT

Dear Fellow Alumnus:

I wish I could sit down with each of you for a person-to-person discussion of recent developments regarding a proposed administrative reorganization of our WPI Alumni Association. In lieu of our personal chat, I would like to use *The Journal* as the vehicle for delivering this important message to you.

The past eight months have been filled with action and progress. Your representatives have made outstanding contributions and, after a series of constructive "cards on the table" discussions and debates, have reached a position which I want to pass along to you. Your individual and collective reactions and suggestions are earnestly solicited.

Let me first give you a brief recap of the developments since the summer of 1969. Soon after his inauguration, our new president of WPI, Dr. George W. Hazzard, clearly stated his conviction that your Alumni Association represents an extremely important group of people. He has repeatedly stated that the future well-being of private, independent colleges in general, and WPI in particular, is, to a very large degree, dependent upon the whole-hearted, year-in-year-out support of alumni. And he was not referring to dollars alone. It was made clear that our president recognizes and stresses the need for non-financial, as well as financial, participation by our alumni.

Since the day Dr. Hazzard arrived on our campus, it has been obvious that his prime objective and the prime objective of our Alumni Association are one and the same: to do all we can for WPI, to do what is best for WPI, and to do it all in the way that is most effective and best for WPI. Our common target was quickly established.

Prior to the February, 1970 meeting of your Alumni Council, Dr. Hazzard requested that the Association give serious (and prompt) consideration to an ADMINISTRATIVE reorganization of the Alumni Association. The reorganization being considered is limited to administrative and office-type activities only.

In presenting his recommendations, Dr. Hazzard made it clear that he is proposing nothing that will reduce the stature or functions of the Alumni Association. On the contrary, he visualizes the kind of dynamic, constructive Association we all want and have been planning for. It will be a more effective and powerful Alumni Association than has been known in any prior period. You, through your council delegates, would continue to elect your own officers, propose your own budgets before consolidation into the overall college budget proposal, and determine your own goals and programs.

At its February 14, 1970 meeting, your Council passed a motion that we consider, between then and June, 1970, the suggested consolidation of the Alumni Association administrative office into the Institute, conditional upon studies of what would have to be done and what the advantages and disadvantages are. The Alumni Association

president was authorized to appoint a committee to make the necessary studies and to meet personally with Dr. Hazzard and his associates. Under the outstanding chairmanship of Brad Hosmer, '61, this committee, named the Administrative Reorganization Committee, has worked hard and completed its assignment quickly and with flying colors. Each member of this committee was a volunteer and an enthusiastic participant.

At the time of their appointments, the people on this committee represented every possible attitude toward the suggested administrative reorganization. In their lengthy face-to-face discussions with Dr. Hazzard and Mr. Halttunen, these fellows raised just about every question you would have asked if all 10,000 of you had been there. Fund-raising, budgeting, control of the Association, communications, publications, office economies, structure of alumni associations at other colleges, selection and election of the alumni secretary, and active involvement of alumni in non-financial working committees were among the major questions discussed at length. You may be assured that the subject at hand has received exhaustive and meticulous study. I can also assure you that the WPI president and your alumni representatives have a complete, two-way understanding of each other's goals, plans, and proposed implementation routes. Most importantly, the two groups. have established a high degree of mutual respect and working rapport.

Before going any further, I want to be sure you clearly understand that there is not, nor has there been, during the deliberations, any intent or proposal to affect your Alumni Association through absorption of the Association into the college structure. As far as your Association is concerned, it is not an absorption, nor is it a consolidation, merger, or acquisition.

In analyzing the duties and functions of your Alumni Association office, it quickly becomes apparent that in many areas there are administrative branches of the college organization performing similar, overlapping, or contiguous assignments. The proposal covers combinations of such activities. For examples, the Alumni Association and the college would: maintain and use one master file of alumni for all purposes; jointly plan, solicit, and record on a consolidated basis, all alumni giving (with all gifts directed to WPI); jointly plan and execute pre-admission inter-

viewing and counseling; and eliminate duplication in publications with the intent of providing more effective communication between each of you and your college. Under the terms of the proposal, the alumni secretary would still be elected by the Alumni Council, but would now report administratively to a member of the WPI president's staff, specifically, the vice president — university relations. His nomination would be recommended jointly by the nominating committee of the Alumni Association and the vice president — university relations.

I called a special meeting of your Executive Committee and Alumni Council on April 4, 1970, for the purpose of receiving Brad Hosmer's final report on the Administrative Reorganization Committee's fulfillment of the terms of the motion of the February Council meeting.

The report recommended that the Alumni Association support and move ahead with the administrative reorganization proposal; and that a full statement of the recommendations and conditions be mailed to every alumnus prior to May 5, 1970. Final action could then be taken at the annual meeting of the Association on June 6, 1970.

There was a full discussion by the Council with Dr. Hazzard of supporting statements, reservations, and qualified opposition. As a result, there was a complete reconciliation of all points of view.

The motion to adopt the Administrative Reorganization Committee's report and present it to each of you for final approval at the June, 1970 meeting was unanimously passed by the Executive Committee and Council.

The material, with all necessary supporting detail, is now in your hands. Please give it your serious consideration and reach your own conclusions based upon your feelings regarding the progress you desire for WPI. Please communicate your opinions to your council delegates in advance of the June meeting.

WPI and the Alumni Association are entering into a new and exciting era. We need the active interest and participation of every one of you.

Best regards,

Robert E. Higgs, '40

President

Alumni Association

AN ALUMNUS COMMENTS

Note: The editors welcome comments concerning issues of the JOURNAL. The following letter is in response to "A Faculty Viewpoint" in the Winter 1970 issue of the JOURNAL by Prof. Roger Borden.

Dear Mr. Zepp:

I would like to call your attention to Volume 73 of "The Journal", specifically, "A Faculty Viewpoint" by Associate Professor Roger R. Borden.

At the risk of appearing cynically critical of his expose, may I suggest that Professor Borden's presentation has all the earmarks of being just another can of Maxwell House off the shelf.

In the last few years, we readers have been deluged with this type of triviality wrapped in the camouflaged cloak of "competence" to the extent that we can sympathize with the Professor's unconscious excursion into repitiveness; almost logarithmic plagiarism. Succinctly, what he says is "old hat".

The only thing novel, I think, about his analysis of all the wrongs that have been wrought on young people by their parents, is the fact that he has, with his assumed and admitted competence, condemned the present world to "pretense, hypocrisy, false premises and expediency". He has suggested, but feebly so, that he is a member of this giant colony of executioners. The pretentiousness of his writings do suggest that he be classified as a charter member.

I, too, in the last 25 years have had some experience in the observation of young people, especially college graduates. Admittedly, my association period follows that of the paternal protection afforded by parents and self adulation propounded by some college professors. These have been the "meat and butter days" — the days a person mentally and financially must become independent; or, become so frustrated that he or she resorts back to a career student, another cog in a government bureau, or some lesser occupation where a more energetic person directs their entire life.

I would suggest to Professor Borden — that his admitted competency to write on his selected subject be fortified with additional responsibilities to be blended with his "teaching and counseling".

And now, a few observations of my own about the youth. First, there is no establishment today that has not always existed between generations because of age differences. The only difference is that the word is used today to suggest something undisciplined, because that's what some ineffective frustrated people hope the world will degenerate to. Then, their appointed wisdom will allow them to save the world.

As for the bearded, mustached students graduating from college, may I say that with the exception of socialist oriented, bureaucratic, educationally affiliated or a parasitically inclined organization, that the length of the students beards and hair become indirectly proportional to their work and family responsibility and to their growing affluence. As they, through their labor and ingenuity become more prosperous, they seem to fuse very quickly into what I think Professor Borden refers to as the estab-

lishment. And, I might say, converse to his pronouncement, it regularly happens before the age of 25. Frankly, it happens when they face the responsibility of paying a great portion of their income for taxes rather than receiving money as a hand-out. Only on the point of hand-out can I agree with Professor Borden concerning the wicked role being played by parents.

Finally, with reference to the next to the last paragraph of his analysis of the human race, may I suggest that he tell his students that this country and its mankind has a future, not if we have a future. My class of '46 was a rebel class, no better, no worse than that of '70. But, if I'm to use his faculty viewpoint as a criteria, the difference is that the Professors at that time instilled in the students the fact that the world did not owe them a thing. We were told that as we progressed mentally, spiritually, and financially that the contemporary world would progress with us. This graduate's viewpoint is that not to realize this fact suggest that one must be totally blind to the economic facts, oblivious to the religious views of humans, unappreciative of the giant strides made in social justice, and quarantined from the elegant plans being made and instituted to improve both man's mental and physical environment. In short, an academic snob would qualify. No accusations intended. This is simply a journey into semantics.

Sincerely,

R. P. Kuykendall, '46 D

FINANCIAL AID IS BASED ON "NEED"

by EDGAR F. HESELBARTH

Director of Financial Aid

A student's parent went to see a psychiatrist and said, "Doctor, I have a problem. But first let me tell you I have a \$100,000 home, three automobiles, and four children in college." The doctor replied, "That's fine. Now what's your problem?" The parent said, "I only make \$60 per week."

It would appear this gentleman, indeed, had somewhat of a "need". Most financial aid administrators, however, would probably review his application with a rather jaundiced eye. Fortunately, we have not encountered such a problem, but as with all colleges we do have the opportunity to review some very interesting family situations.

The concept of "need" in the awarding of student financial aid seems to not only be baffling but frustrating to many parents. Frequently we hear from the parents and sometimes even the students themselves that a student they know, whose family lives in an expensive house, has two or three late model automobiles, a summer cottage, etc., has received great quantities of scholarship aid, while they, living frugally, have been denied the same opportunity. In fact, they feel they have even been penalized for having saved and done without luxury items in order that their offspring might be able to attend college. Generally, the facts do not substantiate this information. Now it is true, that there are colleges which award grants-in-aid to students without consideration of the family financial situation. These grants are primarily for the "purchase" of some particular talent such as athletics, music, art, etc. Of the total financial aid awarded annually in the United States, the greatest amount by far is awarded on the need concept! At WPI all financial aid is awarded on the basis of need.

Now then, what is "need"? Financial need is the difference between the amount of money a student and his family can provide for an education and the expense of that education. Financial need is not a term synonymous with poverty. It is related to college expenses as well as family financial strength. While maintaining its objectively measured standard of living, a family that would need substantial financial aid to send its student to one college might need much less to meet that student's expenses at another institution. Two elements must always be considered:

- 1. The amount of money the student and his family can reasonably be expected to contribute toward a definite period of education, usually an academic year.
- 2. The expense of the education during that period at the institution of higher education the student plans to attend.

Financial need is the difference between these two amounts; the greater the difference, the greater the need, measured on a scale relative to college expenses.

Who determines financial need? At WPI, as with most colleges in the northeastern part of the United States. we use the College Scholarship Service to evaluate, on a formula basis, the financial need of our applicants. These formulas give an objective picture of the financial situation at a given moment and the attempt is to treat identical situations equally. While there are rarely two identical financial situations, in theory at least, the amount of need would be the same if there were. The C. S. S. analysis is a quideline for use of the financial aid administrators, but it must be pointed out that it is the college which makes the final determination of the students' need and, of course, the awards. I think it is important for parents of college students to understand that the C. S. S. formulas are constantly being revised. Therefore, it is possible for a family to be declined aid one year and to have a need the next, even though the overall financial situation has not changed. The reverse of this is also true. Therefore, I usually recommend that parents with children in college apply for financial aid every year (if they feel they have a need) even though their application has been repeatedly declined. I think it is also important for parents to understand that the C. S. S. formula looks mainly to the family income for the contribution to the student's college expenses rather than the assets. Generally the amount expected from family assets is negligible.

Alumni Council Meets

The Alumni Council of the Alumni Association held its Winter meeting on Saturday, February 14, 1970, in Morgan Hall. Thirteen alumni chapters of the Association were represented.

WPI President Dr. George W. Hazzard was introduced to the Council by Alumni Association President Robert E. Higgs, '40. In speaking to the group, Dr. Hazzard stated that he is very impressed by the environment on the campus and by the spirit and attitude of the alumni, and that because of this, he feels WPI is really on the move. He also indicated that the final Planning Committee report would present a model for the college which would individualize the instruction of every Tech student.

Dr. Hazzard introduced an alumnus of WPI, Olavi H. Halttunen, '45, to the Council as a newly-appointed Vice President of the college. He said he would be responsible for university relations, which include public and press relations, college development, and fund raising.

Dr. Hazzard feels very strongly that the college can operate more effectively if a closer relationship exists between the alumni and the college. Therefore, he recommended that the Council take the steps necessary to make the management of alumni affairs a part of the college administration, effective as soon as possible.

Reporting on the activities of the Annual Fund, Alumni Fund Board Chairman Irving James Donahue, Jr., '44, stated that contributions were running about 10% ahead of the previous year with a sum of \$85,385.87 having been contributed as of January 31, 1970.

Encouraging every Council Delegate to voice his opinions and to reflect the feelings of his local chapter to the best of his ability, President Higgs noted that the question of reorganizing the Alumni Association should be thoroughly discussed, and agreement must be reached on a proposed course and time of action.

A majority of the time spent at the meeting was devoted to a discussion of the proposed reorganization of the Association. While many seemed to feel that the Alumni Association and the college might eventually merge, there was a rather widespread lack of knowledge of how the merger would be handled. In addition, most people seemed to feel that the proposed merger date, as set by Dr. Hazzard, was probably too hasty to provide a smooth merger. Thus, upon a motion by Walter J. Bank, '46B, of the Washington Chapter, a committee was established to "consider between now and June, 1970, the consolidation of the Alumni Association administrative office into the Institute, conditional upon the studies of what would have to be done, and what the advantages and disadvantages are. (Furthermore,) the President of the Association is to appoint a committee that will actively look into these points...in conjunction with representatives of the Institute so that we know clearly what has to be done and what it means to us."

Trustees Nominated

At the February 14 meeting of the Alumni Council, three WPI alumni were nominated by the Council to be Term Trustees of the Institute. Term Trustees serve for a period of five years. They may be renominated at the end of their first term to serve a second five-year term, but at the end of two consecutive terms on the Board, they become ineligible for renomination.

This year the Council renominated for a second five-year term Daniel F. O'Grady, '30, and Lincoln Thompson, '21. Mr. O'Grady is currently general services manager for New England Telephone and Telegraph Co. in Boston. While an undergraduate, he was a

member of Alpha Tau Omega Fraternity, Tau Beta Pi, and Skull. As an alumnus, he has served as the Boston Alumni Chapter President and was President of the Alumni Association from 1960 to 1962, Mr. Thompson is retired. He was formerly chairman of the board and chief executive officer of Raymond Engineering, Inc., in Middletown, Conn. While an undergraduate, he was a member of Phi Sigma Kappa Fraternity and Sigma Xi Honorary Society. He has served the Alumni Association as a Council Representative, a member of the Executive Committee, and as a Vice President of the Association.

The third nominee is Thomas B. Graham, '38. He was nominated to fill

a vacancy created because William E. Hanson, '32, Chairman of the Board of Trustees, had completed two successive terms as a Term Trustee and thus was ineligible for renomination.

Mr. Graham is presently operating his own law firm in New York City, and he specializes in patent and trademark matters. He graduated from WPI in 1938, with distinction, in chemical engineering and went on to receive his master's degree from WPI in 1940. He received his Juris Doctor degree from Georgetown University in 1946, and in 1968 WPI awarded him an honorary Doctor of Engineering degree. He is a Past President of the New York Alumni Chapter and is a former member of the Alumni Fund Board.

REUNION WEEKEND JUNE 5, 6, 7, 1970

Friday, June 5

Rooms Available, Daniels Hall. Check-In

9:00 a.m. to Midnight

See Schedule Below for your Reunion

Saturday, June 6

8:30- 9:30 Breakfast for Dorm Guests, Morgan Hall

9:00-12:00 Registration, Morgan Hall Lobby

9:30-11:00 Coffee Time

10:30 Meeting of 50-Year Associates, Daniels Hall Lounge

10:30-11:20 Class Pictures

11:30 Alumni Parade

12:15 Reunion Luncheon, Morgan Hall.

Annual Meeting of Association Follows

3:00 Commissioning Ceremony, ROTC, Alden Memorial

Sunday, June 7

10:00 Baccalaureate, Alden Memorial

2:30 Commencement, Harrington Auditorium

Reception on West Campus Follows

CLASS REUNION SCHEDULE

1910	Morgan Hall W. P. I.	June 5	1920	Franklin Manor W. Boylston, Mass.	June 5
1911	Sterling Inn Sterling, Mass.	June 5	1925	Worcester Country Club	June 5
			1930	Worcester Country Club	June 5
1912	Marlboro Country Club Marlboro, Mass.	June 5	1935	Old Mill, Rt. 2A Westminster, Mass.	June 5
1913	Winchendon School Winchendon, Mass.	June 4-5	1940	Worcester Country Club	June 5
1010			1945	Sheraton Yankee Drummer Inn & Motor House	June 6
1915	To be announced		ł.	Auburn, Mass.	

ALUMNI FUND PROGRESS REPORT

With 2½ months remaining in the 1969–70 annual Alumni Fund, a total of \$103,605.92 has been contributed by loyal alumni, and an additional \$11,449.88 has been contributed by corporations which have matching gift programs. Thus, the total of the two programs as of April 15, 1970, is \$115,055.80. Last year on the same date \$93,878.55 had been contributed by alumni.

The announcement in February of a special Challenge Fund has helped to boost the total contributions to the Fund, and the outlook from this viewpoint continues to be encouraging. However, the percentage of participation by alumni is somewhat disappointing as of April 15. On that date only 26 % of the alumni had contributed to the Fund, which is a long way from meeting the optimistic goal of 50 % participation set by the Fund Board.

DISTRICT SUMMARY

April 15, 1970

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Chapter · Pittsburgh	Chapter Rank by % Participation 1	∦ in Chapter 91	# of Gifts or Pledges 39	% Participation 43	Total Dollars \$ 2,740.00	Average Gift \$70.25
Detroit Northern California Southeastern Cleveland	2 4 5	75 140 95 98	27 50 33 32	36 36 35 33	901.00 2,015.00 1,292.50 1,122.00	33.37 40.30 39.17 35.06
Northern New Jersey Rhode Island Rochester-Genesee Boston Hartford	7 9 10	441 262 104 801 612	145 84 33 238 179	33 32 32 30 29	9,289.95 2,534.00 1,151.13 8,317.00 7,249.00	64.06 30.17 34.88 34.95 40.50
Connecticut Valley Los Angeles North Shore Philadelphia New Haven	11 13 15	350 216 297 353 419	98 60 81 97 107	28 28 27 27 26	3,407.00 2,647.38 2,770.15 3,325.00 4,557.00	34.77 44.12 34.20 34.27 42.58
Western New York Worcester Washington Central New York Hudson-Mohawk	18 19	75 1,324 370 107 135	20 346 94 26 32	26 26 25 24 24	582.00 15,917.22 2,749.00 1,155.00 1,901.13	29.10 46.00 29.24 44.42 59.41
New York Chicago Berkshire Pacific Northwest Wilmington	22 23 25	542 105 68 37 149	133 24 13 7 24	24 23 19 19	6,087.00 1,225.00 440.00 325.00 1,240.00	45.76 51.04 33.80 46.43 51.66
Cincinnati Out of District Others and Honorary	26 	50 1,813 —	5 352 16	10 19 —	120.00 16,123.41 2,423.05	24.00 45.80 —
Totals Matching Gifts GRAND TOTAL		9,129	2,395	26%	\$103,605.92 11,449.88 \$115,055.80	\$43.26

COMPUTER SCIENCE PROGRAM APPROVED HANSON ELECTED TRUSTEE-AT-LARGE

The Board of Trustees, at their midwinter meeting on February 14, approved a recommendation to establish a Department of Computer Science, effective July 1, 1970, and to establish a Bachelor of Science Program in Computer Science, effective in September, 1970. The new computer science program and degree will supplement the master's degree program in computer science which was approved by the trustees in February, 1969. The new program will utilize the facilities of the Worcester Area College Computation Center located in Gordon Library. Dr. Norman E. Sondak is director of the center.

The board elected Dr. William E. Hanson, '32, an at-large trustee, effective July 1, 1970. Dr. Hanson, who is chairman of the Board of Trustees, is currently a term trustee and has served two five-year terms. Under the constitution and by-laws of the Alumni Association, he became ineligible for renomination as a term trustee this year and could continue to serve on the board only by the action of the trustees.

In other business, Dean Martin C. Van de Visse informed the board that applications for admission are running about the same as last year with a freshman class of 550 as the goal this year. He also noted that the elimination of Saturday classes has probably decreased the student social life and that the number of recruiters and the number of available jobs are down from a year ago.

Student Government President Steven A. Udell of Hewlett, N.Y., presented his thoughts to the trustees about the WPI community. He mentioned the need for a student union, a faculty lounge, and a definite need to make student housing more appealing. He further stated that he felt the Planning Committee report, if accepted, would be a giant step in the right direction for a successful WPI in the future.

In his report to the trustees, Dr. Hazzard stated, in part: This report, my second, reflects a snow job. Here in Worcester, snow is all we have seen since early December, huge piles and streets full of it. But the campus has been hot with discussion about *Two Towers III* and the college

role in many things. So the snow melts fast where the discussion is.

The news media try to convince people they should feel sorry for college presidents these days. They shouldn't. We never had a better opportunity to examine our goals and test our ability to meet the challenges of society. And at WPI there is still a healthy climate for orderly and constructive change.

There are other reasons why I am optimistic about WPI. This past winter and fall I have visited 16 alumni chapters. The alumni enthusiasm for WPI, respect for its past accomplishments, and interest in its future are exciting stimulants to a new president. But the effect is visible elsewhere. Everywhere I go in Worcester I find the same attitudes, that WPI has been and will be an important and respected part of the city. My objective is to retain and increase that confidence.

Most interesting of all are the faculty and students and the "process" that is our kind of higher education. We have an excellent student body, intelligent, hard working, moral. Our faculty is devoted to teaching and it, too, fits the student description. Yet here is the rub.

Many faculty and students have responded enthusiastically to the proposals in *Two Towers III*. Yet many others have expressed doubts and raised objections. The way they do so expresses an attitude we must overcome at WPI. It seems to be a lack of self-confidence in their ability to accomplish great things, to learn on their own, to put themselves at risk for fear of failure. Still to be established is a self-image that properly reflects their abilities and frees them for great accomplishment. To me, their willingness to move ahead into a unique WPI kind of education will be a measure of our success in this area.

We are in the throes of developing a long range academic plan stating the goals and the necessary intellectual steps to reach them. Coupled with the intellectual must be a physical plan to provide the environment most likely to ensure success. Much has been done by a sub unit of the Planning Committee but a great deal more detailed planning

must be done before we can move confidently ahead. Only with a detailed, careful, yet flexible physical plan can we be confident about our next moves.

The details are not yet clear but I think two physical needs are essential yet unmet. Even with the completion of the Stoddard Residence Center we still will need student housing promptly. The only question is "what kind?" Secondly we need better physical means for non-classroom interactions by all parts of our campus community — a College Center, but not necessarily the big all purpose student union of the state university. With the help of a sub-committee of the Planning Committee, I believe we will produce some novel but useful ideas. It is most important that both the housing and the center serve the real needs of the WPI community.

Again this year the Student Social Committee is co-sponsoring with the Worcester Art Museum their series of twelve Sunday afternoon free concerts. These include performances of such groups as the New York Jazz Sextet, the Prokofiev Quartet, and the Mozarteum Woodwind Quintet from Argentina.

A dream of students for almost the past decade became a reality in late November when radio station WICN received permission from the Federal Communications Commission to begin program testing. This allowed the station, which is a project shared by students of both WPI and Holy Cross, to begin broadcasting at full power of 2,000 watts. This station, which appears at 90.5 megacycles on the FM dial, now broadcasts athletic events, campus news, and for a large part of their program time, recorded music.

During the fall the newspapers had many accounts of student participation throughout the country in the Vietnam moratorium activities. Students in the Worcester area as throughout the country participated in October and November activities. On October 15 classes were held as usual, though some were sparsely attended as students took part in discussions concerning the Vietnam war. Some faculty members took the opportunity in the class period to discuss the topic of the day. In the afternoon delegations of students from the colleges of the city all marched to the center of Worcester for an outdoor rally in front of City Hall where a number of speakers took part. They heard talks by President Jackson of Clark University, President Swords of Holy Cross, and Dr. Hoagland of the Worcester Foundation for Experimental Biology. Commendation is certainly due the Worcester Police Department who worked with student leaders in arranging the routes of march and providing motorcycle and police escorts for the marching contingents, protecting them from traffic hazards on route to the center of the city.

On the November moratorium day the campus activities were on a somewhat smaller scale. One of the major efforts of the WPI group was to encourage a large number of

"I FIND MYSELF REALLY ENTHUSIASTIC"

students to go to the local Red Cross Blood Center and make a donation of blood as an expression of their concern for others.

Our black students have found the WPI experience generally satisfactory. We hope to continue or modestly expand the admission of academically qualified black high school graduates. The interest of several black girls is especially encouraging to us and to the men now on campus.

Several comments are in order in reference to the admissions situation this year. In spite of the increase in tuition effective next year, interest by applicants in WPI is at an all time high. More and more students with a serious interest in a technological education are finding WPI attractive. Helping to maintain high quality in the applicants is a major contribution of the Alumni Admissions Counselors. This is a dedicated group of several hundred alumni who actively have been seeking out and counseling the best candidates in their home areas. The admissions staff has developed a program to inform and involve these counselors throughout the year.

The WPI Society of Families is again sponsoring coffee parties for prospective freshmen and their families this winter. Often co-sponsored by alumni in the areas where the meetings are held, these parties have been very effective in attracting candidates to the campus for a personal interview. Past experience indicates that the campus visit is one of the key factors in influencing an applicant to prefer WPI. A final, and major, factor is the increased financial aid which the trustees made available, starting last year.

The Stoddard Residence Center construction is about on schedule. The recent bitter cold weather has slowed construction though much work is going on under the cocoon-like protective covering of wrap-around plastic. These new residences will be available non too soon as more nearby housing falls in the name of urban redevelopment.

On January 19, the Worcester Consortium for Higher Education was joined by Dr. Lawrence Fox, who became the full-time Executive Director. He brings a wealth of experience to this position after three years as Associate Director of the Massachusetts Advisory Council on Education in Boston. The Consortium continues to be one of the great hopes of the Worcester academic community as we find more and more ways in which the local colleges can

cooperate. There are now signs of students looking for ways to take part in cooperative ventures. You can see such examples in the cross registration, library bookshuttle, FM Radio Station or the Worcester Intercollegiate Symphonic Band, and the groups which meet at the Collegiate Religious Center just off the WPI campus.

Voluntary ROTC seems eminently successful. All those now taking part are there by their own choice which permits a more meaningful educational experience for all concerned. The draft lottery had its effect on campus as everyplace in the country where young men of college age anxiously watched to see what number they would draw in the lottery. Just how the lottery will actually affect young men in general, and WPI students in particular, we can't tell yet.

The Tech Community Council which I proposed at the beginning of the academic year is now a reality. The council consists of five undergraduates, on graduate student, four faculty members and three members of the administration. Their first meeting in January was, to our knowledge, the first time such a representative group had ever met on this campus for the express purpose of identifying problems and needs, with the responsibility for making recommendations to the proper action group. Several pertinent topics were on their first agenda and the first reaction is that the TCC will fill an important gap in the campus interaction structure. It is our sincere hope that this forum for open discussion will bring to the attention of all concerned the type of problems which, when not recognized, have led to campus unhappiness in many parts of the country.

Involving students in the real problems of the community, a major objective of Two Towers III, is already a reality in several departments on campus. Dr. Nicholas Onorato has arranged for students in his Business Finance course to work on solving real financial problems of local companies. This type of practical experience is made possible through the cooperation of members of his School of Industrial Management classes. This same type of real-life experience has involved students in the Management Engineering program in developing new products through the cooperation of a Boston firm. Courses taught by several faculty members in other engineering fields have also involved this practical application approach to the great benefit of both the students and the participating businessmen. The enthusiasm on the part of students and the greater effectiveness of the learning process, certainly points out the value of the projects approach to the WPI education programs - a key element of the approach being developed by the Planning Committee.

Basketball coaching duties this year are being handled by two part-time coaches. The appointment of a permanent coach will probably be made in the near future.

The women's physical education program has completed its first semester with no problems. Mrs. Paula Lantz, a physical education college graduate, has taught the girls

the fundamentals of swimming, tennis and bowling. As the number of women students grows, it will be necessary to provide a larger permanent girls' locker room and perhaps additional athletic field facilities.

One of the values of the athletic program which is not readily apparent is the contact which team participation establishes for WPI with the colleges with whom we do not have much regular contact at the faculty or administrative levels because of distance or differences in academic programs. WPI teams have always deported themselves as gentlemen. Their dress, behavior, and in most cases their athletic prowess leave an excellent impression on our opponents, students, faculties, administrators and alumni. Our normal competitors include Dartmouth, Harvard, Middlebury, Boston University, Brandeis, Amherst, Trinity, Wesleyan, Brown and Williams.

Plans are progressing well for the Second International Conference on Molecular Sieve Zeolites to be held on campus September 8 to 11 under the local chairmanship of Professor Leonard B. Sand. Financial support in the amount of \$10,000 has already been received from industry and from the Petroleum Research Fund to defray expenses. Ten distinguished speakers will present invited papers; seventy-five additional papers have been selected for presentation. This WPI conference will report progress in the field since the first conference in London in 1967. The next meeting is already being planned for Zurich in 1973.

The new freshman elective, Introduction to Environmental Problems, has been so well received that Dr. Zwiebel of Chemical Engineering and Professor Lantz of Civil Engineering will offer it again during the second semester.

Consulting with industry is a fairly common occupation for faculty members. However, Dr. Wilmer Kranich, head of the Chemical Engineering department, must have set some sort of local distance record when he went to Botswana in southern Africa in connection with a project for recovery of several commercially useful salts from a dry lake.

In looking back over my first half year on campus, I find myself really enthusiastic about the future of WPI. Many challenges lie ahead for all of us. However, the prospects for success are bright. We have on this campus a dedicated staff of people who want the very best opportunities for our students. This is their reason for being here.

This spirit, the optimism I've felt on all sides, the many activities which have been described in this letter, all add up to the idea expressed by an early president of Haverford College, Rufus Jones, who said:

"The most important thing about a college today, after its intellectual honesty and integrity are taken for granted, is the way it reaches the innermost life of its students and quickens the central aims and ideals by which they are henceforth to live."

What I see here at WPI is just that opportunity for people who will play a central role in tomorrow's society.

IN MEMORY

Edwin E. Waite, '03

Edwin E. Waite, '03, passed away on December 23, 1969, in Framingham, Mass. He was 88.

Born in Worcester, Mass., May 10, 1881, he graduated from WPI in 1903 and went on to become well known as an inventive engineer as well as a violinist. He was a partner in the Waite-Wilde Co., manufacturers, in Framingham.

Mr. Waite was a 32nd degree Mason and a member of Alpha Lodge A. F. and A. M., and the Williamsport (Pa.) Consistory. He was also a reader at the Christian Science Church of Framingham.

He is survived by a son; a daughter, three grandchildren; and four greatgrandchildren.

Charles T. Willard, '03

Charles T. Willard, '03, died on January 28, 1970, at a nursing home in Madison, N.J., at the age of 88.

Mr. Willard was born in Worcester, Mass., on January 16, 1882, and he attended Worcester Classical High School. He entered WPI in the fall of 1899 and graduated in 1903 with a degree in chemistry. He retired in 1957 as chief metallurgist for the Singer Manufacturing Co., Elizabethport, N.J., after 53 years service.

He was a member of the American Chemical Society, the Echo Lake Golf Club of Westfield, N.J., an honorary member and founding trustee of Vail-Deane School in Elizabeth, and a member of Sigma Alpha Epsilon Fraternity.

Mr. Willard is survived by two daughters; six grandchildren; and two great-grandsons.

Frank G. Webber, '04

Frank G. Webber, '04, died on January 7, 1970, in Winter Haven, Fla. He was 88.

Born in N. Brookfield, Mass., on July 11, 1881, he attended N. Brookfield High School before entering WPI in 1900. He graduated in 1904 with a degree in electrical engineering.

Mr. Webber was employed by American Telephone and Telegraph Co. in Chicago, A. Burlingame Co. and O. S. Kendall Co., both of Worcester, before he joined the Holyoke (Mass.) Valve & Hydrant Co. in 1910. He retired in 1967 as president of that company.

He was a registered professional engineer and a past master of the William Whiting Lodge of A. F. and A. M.

He is survived by a son, Frederick G. Webber, '34; a daughter; a brother; and a sister.

George W. Woodward, '08

George W. Woodward, '08, died in a Hartford (Conn.) nursing home on December 24, 1969, at the age of 84.

He was born in Worcester on May 25, 1885 and he entered WPI in 1904. While at WPI he was a member of Sigma Alpha Epsilon Fraternity. He was treasurer of his freshman class. He received his bachelor's degree from Cornell University in 1909.

Mr. Woodward was employed by the Factory Insurance Association of Hartford, Conn., from 1909 to 1914. In 1914 he left that company to join Rockwood Sprinkler Co. of Worcester, where he remained until 1931. In 1931 he returned to the Factory Insurance Association and was employed there until he retired in 1956.

He was a member of the Masons, the City Club of Hartford, and the Avon Country Club.

He is survived by his widow, Lylian (Weisner) Woodward; a daughter; two brothers; a sister; two grandchildren; and a great-grandchild.

Alfred N. Chase, '10

Alfred N. Chase, '10, died in Joplin, Mo., on August 24, 1969, after a long illness. He was 82.

Mr. Chase was born on May 27, 1887, in New Bedford, Mass., and he attended secondary school in that city. He entered WPI in 1906 and graduated in 1910 with a degree in chemistry. While at WPI he was a member of Theta Chi Fraternity, and he was elected permanent class treasurer.

He was employed by the Atlas Powder Co. (now Atlas Chemical Co.) in Joplin, Mo., for 42 years prior to his retirement in 1952. He was plant manager at the Joplin explosives plant.

Mr. Chase was married in Houghton, Mich., on August 21, 1911, to Mayme A. MacCarthy. She passed away in 1968. He was a member of the Elks and the Twin Hills Golf and Country Club in Joplin.

He is survived by a brother, Robert E.

John L. Harvey, '10

John L. Harvey, '10, died on February 3, 1969, in Winter Haven, Fla.

Mr. Harvey was born on June 7, 1889, at Norton, Mass., and attended Attleboro (Mass.) High School. He came to WPI in 1906 and graduated in 1910 with a degree in electrical engineering. He was a member of Delta Tau Fraternity, which is now Sigma Phi Epsilon.

Mr. Harvey was employed from 1922 until his retirement by the Niagara Mohawk Power Corp. in Albany, N.Y. He was a member of the American Institute of Electrical Engineers, the New York State Society of Professional Engineers, and the Albany (N.Y.) Society of Engineers.

Daniel J. Riordan, '11

Daniel J. Riordan, '11, of Collinsville, Conn., died on January 4, 1970, after a brief illness. He was 78.

He was born on February 2, 1891, in Worcester, Mass., and he attended Worcester Classical High School before entering WPI in 1907.

Mr. Riordan was employed by American Steel & Wire Co. of Worcester for three years and by Reed-Prentice Co. of Worcester for ten years before he joined the Collins Co. of Collinsville, Conn., in 1925. He was employed there for over 40 years and was production manager at the time of his retirement in 1965.

Survivors include his wife, Mrs. Ellen (Elliott) Riordan; and a sister, Mrs. Grace Quinn.

Leon J. Croteau, '14

Leon J. Croteau, '14, died in Fairlawn Hospital, Worcester, on February 5, 1970, at the age of 82.

Born June 6, 1887, in Worcester, he attended Williston Seminary before entering WPI in 1911. He received an LLB degree from Northeastern University in 1921, and he also received a degree in graphology, the analyzing of handwriting, from the University of Missouri.

Mr. Croteau was a lifelong resident of Worcester and was a lawyer and handwriting analyst for 35 years prior to his retirement in 1965. He was a member of the Worcester County Bar Association, the Tech Old Timers, the Tougas Family Association, and the Union St. Jean Baptiste Society.

He leaves his widow, Mabel E. (Turpin) Croteau; a daughter; a stepdaughter; a brother; four sisters; and nine grandchildren.

Louis T. Hamblin, '14

Louis T. Hamblin, '14, died on January 12, 1970, in Worcester's Fairlawn Hospital. He was 76.

Born in Worcester in 1893, he attended Worcester Classical High School before entering WPI in 1910. He later withdrew from WPI, and he received a degree in mechanical engineering from Cornell University in 1915. He was elected to membership in Tau Beta Pi honorary society.

Mr. Hamblin was a former officer of Bowker-Hamblin-Quirk, Inc., of Worcester and, at the time of his retirement, was president of that company. He was a member of the Paxton (Mass.) board of selectmen for many years, the Worcester Club, the Sons of Paxton, and the University Club of Worcester.

He is survived by his widow, Esther (Scott) Hamblin; and a nephew, Richard H. Hazelton.

Harold F. Brown, '15

Harold F. Brown, '15, passed away on January 5, 1970, in Gardner, Mass., at the age of 77. His death followed a brief illness.

A native of Gardner, he attended Gardner High School before entering WPI in 1911. He majored in mechanical engineering.

Mr. Brown was president and treasurer of Brown Brothers Chair Manufacturing Co. of Gardner from 1916 until 1954, and in 1954 he purchased Brown and Lee, Inc., in Gardner and became president and treasurer. He operated that company until his retirement in 1969.

He was a member of the Sons of Union Veterans, a vice president and director of the Chairtown Cooperative Bank in Gardner, and a very active member of the Masons.

Survivors include his widow, Jessie (Lusk) Brown; and several cousins.

Harold W. Howarth, '16

Harold W. Howarth, '16, died on February 13, 1970, in Atlanta, Ga. He was 75.

Mr. Howarth was born in Lawrence, Mass., on December 29, 1894, and attended preparatory school at Webster (Mass.) High School. He entered WPI in 1912 and while at Tech was a member of Sigma Alpha Epsilon Fraternity.

He was a long-time employee of Robert and Company Associates in Atlanta and was chief engineer and project manager for that company on some of their largest projects. Mr. Howarth was a 32nd degree Mason, a member of the Atlanta Chamber of Commerce, the Georgia Society of Professional Engineers, and the American Society of Civil Engineers. He was also a past president of the Architects and Engineers Institute, the Atlanta Chapter of the Navy League, and he continued to be very active in his fraternity and the WP1 Alumni Association

He is survived by his widow, Mrs. Ruby (Quinn) Howarth; a daughter; a son; two sisters; and two grandchildren.

Edward E. Wolfe, '20

Edward E. Wolfe, '20, died on August 6, 1969, in a Kansas City (Mo.) hospital.

Born on January 9, 1899, in Worcester, Mass., he attended South High School in Worcester before enrolling at WPI in 1916. He graduated in 1920 with a BS degree in chemistry.

Mr. Wolfe spent most of his life in Missouri. He was employed by the city of Hannibal, Mo., as a chemist for 18 years and most recently had been employed by Western Chemical Co. in Kansas City as technical director.

He was a member of the American Water Works Association, the American Society of Refrigeration Engineers, the American Society of Corrosion Engineers, and he was a Mason.

Dr. Robert E. Bateson, '24

Dr. Robert E. Bateson, '24, died on January 22, 1970, in Sun City Center, Fla.

Dr. Bateson was born in Hopedale, Mass., and attended Hopedale High School. He graduated from WPI in 1924 with a bachelor of science degree in mechanical engineering. While at Tech he was a member of Phi Sigma Kappa Fraternity and was active in musical organizations. He later went on to receive both a master's and a doctorate degree from New York University in 1946 and 1950, respectively.

He worked for the Campbell Soup Co. as a maintenance engineer and for the Draper Corp. as a design engineer before he entered the field of education. He retired in 1965 after serving on the faculty of Central Connecticut State College, New Britain, Conn., for 23 years. He was a specialist in industrial and vocational education.

He was a member of numerous educational and professional societies, a 32nd degree Mason, a member of the New Britain Rotary Club, and a registered professional engineer.

Dr. Bateson is survived by his widow, Clara S. Bateson; and by two daughters.

Joseph Matulaitis, '29

Joseph Matulaitis, '29, died on February 10, 1970, at Arlington (Va.) Hospital after suffering a heart attack. He was 61.

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Andrew B. Holmstrom, '17

Andrew B. Holmstrom, '17, prominent Worcester citizen and industrialist, passed away on January 13, 1970, at the age of 74.

A native of Worcester, he entered WPI in 1913 and graduated in 1917 with a bachelor of science degree in civil engineering. He was elected to membership in Chi Epsilon, the national civil engineering honor society. In June of 1968, his alma mater awarded him an honorary doctor of engineering degree.

Most of Mr. Holmstrom's life was devoted to working for the city of Worcester and for the Norton Co. of Worcester. After serving in the Navy for two years, he joined the Norton Co. in 1919 as a design and construction engineer. He left that company in 1924 to become superintendent of sewers for the city of Worcester, a position he held for five years. He rejoined Norton in 1929 and rose to be named vice president and

works manager of the Abrasives Div. in 1940. Upon his retirement in 1960, after 36 years with the company, he was vice president and a director of Norton. He was a member of the Worcester City Council from 1950 to 1967 and was elected mayor of Worcester in 1950, thus becoming the first mayor of Worcester under the city manager form of government.

He was active in numerous civic, fraternal, and engineering organizations. Among these, he was a member of the Development Program Cabinet of WPI during the Centennial Fund program, vice chairman of the Advisory Board of Quinsigamond Community College, a member of the board of directors of the Worcester Council of Churches, a member of the board of trustees of the Bay State Society for the Crippled and Handicapped, Inc., and a Mason.

"I believe in energy," Holmstrom had once said. "I believe in life. I believe in order. I believe in beauty, and thought and conscience, and in love which is brotherhood and charity. I believe that the numerous recently found tools of human desires such as those attained in the field of electronics and atomic research, serve only to reaffirm the energy, the life, and the order that I recognize, in part, as God's design." And thus Andy lived.

He leaves his widow, Jennie E. Holmstrom, of Worcester; four daughters; two sisters; and eleven grandchildren.

He was born June 30, 1908, in Worcester and attended Classical High School here before graduating from WPI in 1929 with a degree in mechanical engineering.

Mr. Matulaitis worked for the Federal Aviation Administration for 17 years and the Army Materiel Command for 16 years. He was serving as chief of the Systems Branch of the Air Mobility Division of the Research and Development and Engineering Directorate at the Army Medical Command headquarters at the time of his death.

He is survived by his wife, Anne; two daughters; and two grandchildren.

Edward D. Chase, '34

Edward D. Chase, '34, of Hingham, Mass., died suddenly on January 9, 1970, after suffering a heart attack at his home. He was 57.

Chase was born in Springfield, Mass., on March 2, 1912, and entered WPI in 1930 after attending Springfield Technical High School. He graduated in 1935 with a degree in civil engineering.

After graduation from college, Mr. Chase was employed by the U.S. Geological Survey for a year before he joined the U.S. Army's Corps of Engineers. At the time of his death he was assistant chief of the Engineering Division in Waltham, Mass., and held a prominent position in the planning and design of many major construction projects. He had recently been the recipient of the Army's Outstanding Performance Citation

He was a registered professional engineer in Maine, a member of the Boston Society of Civil Engineers, the Hingham Historical Society, and a past president of the Hingham Men's Club.

Survivors include his widow, Dorothy (Abbott) Chase, and two daughters, Susan and Andrea. A son, Lt. Curtis E., died in action in Vietnam in 1967.

Walter F. Graham, '40

Walter F. Graham, '40, died on December 2, 1969.

He was born on June 23, 1918, in Worcester, Mass., and he entered WPI in 1936, graduating in 1940 with an electrical engineering degree. He was selected for membership in Tau Beta Pi and Sigma Xi.

Mr. Graham had been employed at the U.S. Navy Underwater Sound Lab in New London, Conn., as an electrical engineer.

Among his survivors are two brothers, Martin B., '35, and Thomas B., '38.

Theodore A. Kostarides, '41

Theodore A. Kostarides, '41, died suddenly at Newport (R.I.) Hospital on January 28, 1970. He was 50.

A native of Worcester, he attended Classical High School before enrolling at WPI in 1937. He graduated in 1941 with a bachelor of science degree in electrical engineering.

Mr. Kostarides was an electrical engineer at the Raytheon Co., Burlington, Mass., and had been stationed at the Newport Naval Base for the past 15 years. He was a member of the board of St. Spyridon's Church in Newport, and a member of the Lions Club and the Masons.

He is survived by his wife, Ariadne (Sarando) Kostarides; a son, Anestis T. II; and a daughter, Miss Chrysanthe.

Raymond K. Gardner, '53

Raymond K. Gardner, '53, was fatally injured in Andover, Mass., on January 25, 1970, when a jack slipped from the car he was working on and pinned him under the vehicle. He was 38.

Mr. Gardner was born in Meriden, Conn., on September 26, 1931. He entered WPI in 1949 and received a BS degree in mechanical engineering in 1953. While in college he participated in the band, the paddle rush, and the rope pull, and he was a member of Sigma Alpha Epsilon Fraternity.

He had been employed as a project engineer by Dynametrics Corp., Burlington, Mass., as a project engineer by Corning Glass Works, Corning, N.Y., and, at the time of his death, he was an engineer at Dionics Corp., Woburn, Mass. He was a registered professional engineer in Massachusetts.

He is survived by his widow, Judith L. (Sample) Gardner; three sons, James, Mark, and Scott; a daughter, Susan; his mother, Mrs. Walter Gardner; and three sisters.

Mark H. Sannella, '57

Mark H. Sannella, '57, died on December 30, 1969, in Worcester, after a long illness. He was 34.

Born in Worcester on December 4, 1935, he was the son of Frank and Helen Sannella. (Frank is the cross country and relay coach at WPI.) Mark was graduated from Oxford (Mass.) High School and entered WPI in 1953. He received a bachelor of science degree from the University of Massachusetts in 1961 with a major in hotel and food management.

Mr. Sannella was a hotel manager for the Indian Hills Motel, Richmond, Va., until his retirement in 1967 because of ill health. He had served as assistant librarian in Oxford for the last two years.

Besides his parents, he is survived by a sister. Miss Lee Ann Sannella.

YOUR CLASS AND OTHERS



1903

Benjamin D. Foot was recently honored by the choirs of two churches on the eve of his 90th birthday. Mr. Foot, who lives in Scotia, N.Y., attends rehearsals at both churches each week and sings with the two choirs on Sunday mornings. He was employed by G. E. for 43 years prior to his retirement in 1946.

1908

Royal W. Davenport of Silver Springs, Md., writes: "Things are going well for us. During the last year we spent the seven cooler months here in Rossmoor Leisure World and the five warmer months in Stone Harbor, N.J. The latter has the fresh sea air that is a relieving contrast to the more humid air of inland places. It is a good place for entertaining grandchildren and relatives. We continue to be enthusiastic with our setup at Leisure World. Anyone interested would do well to investigate the place."

Donald D. Simonds, Secretary

1909

Leslie E. Swift, who lives in Bethlehem, Pa., reports that he and his wife are in fairly good health and are grandparents of three and great-grandparents of a ten-month-old boy.

1910

Millard F. Clement writes: "I am looking forward to the 60th-year reunion of the class of 1910 with as many present as possible. Really have enjoyed retirement including the celebration of our 50th wedding anniversary last July." Millard lives in Middletown, N.Y.

1912

Ernest R. (Nibs) Taylor had an active 11 months in 1969 with outdoor work (we still would like to see that electric hoe). Every-

thing was going fine until December when both Nibs and Myrt were taken with the flu. But he is very much alive and expects another 11 months of activity and will be cautious next December... I don't remember hearing from George I. Gilchrest since graduation. Now he sent me a colored picture of roadrunners, cuckoo birds which live happily in Arizona. George lives in Mesa but spends summers in hillbilly western Maryland... Guy C. Hawkins has been spending winters in Arizona. Now has sold out in Vermont and will live permanently in Tucson... Of the 35 men of 1912, 18 of us still resist the rigors of New England.

Harrison G. Brown Secretary

1915

Maurice G. Steele writes: "Sold my eleven-year-old business on January 1, 1969. Am continuing on as president of the company which is known as M. G. Steele, Inc. The prospect of retirement continues to recede." Maurice lives in Rome, N.Y.

1917

Walter H. Gifford writes: "Enjoying good health for a 50-year plus alumnus. Divide my time between Cape Cod in the winter and Maine in the summer."... From Weston, Conn., comes a note from Moses H. Teaze: "Have reached the 'ripe old age' of 81... with three fine children (all over 40), nine grandchildren, and 3½ great-grandchildren".

1918

Maurice W. Richardson is employed 10 months of the year by the Amsterdam (N.Y.) Community Chest as its executive secretary. He retired in 1961 after 38 years with Mohasco Industries, Inc., in Amsterdam.

1922

Neil T. Heffernan continues as President of Heffernan Press, Inc., in Worcester. Heffernan Press is one of the largest family-owned printing businesses left in New England.

1923

Married: Claude M. Lamb to Mrs. Dorothea E. Rogers on November 22, 1969, in Laconia, N.H. Mr. Lamb is retired. The couple is making their home in Laconia.

1924

Godfrey J. Danielson retired on May 1, 1969, from the New York State Public Service Commission... Leslie J. Hooper, Professor Emeritus of Hydraulic Engineering and Director Emeritus of Alden Research Labs at WPI, was recently named to a special water study commission by Massachusetts Governor Sargent. In addition, on February 24, 1970, he received the Worcester Engineering Society's annual Science Achievement Award for outstanding contribution in the field of hydraulic engineering, pollution control, and water resources.

CORRECTIONS

Harold B. Whitmore, '21, should have been listed as a lifetime contributor in the report of the 1968-69 Annual Alumni Fund.

It should have been noted in the Class Notes section of the Fall Journal that Edmond G. Reed, '23, held a position as Town Engineer in Agawam, Mass. prior to his retirement.

We welcome
your comments
and ideas
concerning the
publication
of the Journal.

Please address:

Editor, The Journal Worcester Polytechnic Institute, Worcester, Mass. 01609

Class of 1930 40th Reunion

Worcester Country Club June 5, 1970

Ed Delano will be riding a bicycle from California to Worcester to attend the reunion. Can't you make it, too?

1925

David C. Bailey retired from the Bailey Co., Amesbury, Mass., on January 31, 1970. He had been president of the company since 1951.

1926

Arthur R. Brown has retired from Westinghouse Electric Corp., and is living in Sun City, Calif.

1927

Married: Joseph J. Sears to Mrs. Janet Carples Magod of Hartford, Conn., on January 8, 1970. The couple will reside in W. Hartford.

C. Sture Carlson reports that he retired from the Central Engineering Dept. of Norton Co. of Worcester in April, 1969... Harold B. Mallett has retired from the American Cyanamid Co., Wallingford, Conn., and he is now living in Boca Raton, Fla... Carleton R. Sanford also retired recently. He was employed by Eastman Kodak Co. in Rochester, N.Y., as assistant manager of the film sensitizing and plate organization. He now makes his home in Walnut Creek, Calif.

Clifford I. Fahlstrom is vice president of the Associated Industries of Massachusetts... Nathan M. Southwick writes: "As a retired man I'm getting more involved with church and allied work. Started on the MEALS ON WHEELS program in Feb. 1969, delivering hot meals to needy elderly...now involved in a new program called 'Leisure and Learning'... for the retired... In addition, I'm driving patients for the Red Cross to the various hospitals... Not enough hours in the day!" Nathan lives in Warwick, R.I.

1928

Gordon E. Rice reports that he retired from Agway Inc. of Syracuse, N.Y., on January 1, 1969, and he is very busy doing consultant work... Arthur T. Simmonds writes: "I retired on May 1, 1969, as director of hydro production from the New England Power Co., Lebanon, N.H., after over 40 years of service. I am now settled down in Littleton, N.H."

1929

Wayne S. Berry has retired from Underwriters' Laboratories in Melville, N.Y., after over 40 years of service.

1930

Henry O. Allen retired on May 1, 1969, after a career with Westinghouse Electric Corp... David K. Bragg has retired from the Foxboro Co., Foxboro, Mass., where he was a member of the research dept.

1931

F. Dudley Chaffee writes: "For thirty years I have been in charge of operations and maintenance at six different colleges or universities and while not rich, I have enjoyed every minute of that work. For the last five years I have been in charge of planning and new construction at the University of North Carolina at Greensboro. Here, I have been and am supervising over \$30 million in new construction."... Russell V. Corsini is president of Denholm & McKay, a department store in Worcester...C. Russell Gill is market manager, textiles, for ICI America, Inc., of Stamford, Conn. He currently is residing in Charlotte,

N.C.... Codman & Shurtleff, Inc., of Randolph, Mass., employs *Eben H. Rice* as their executive vice president. He reports that he married Johanna Karwath on January 8, 1968, and that they are the parents of a daughter, Rebecca Jo.

1932

Clement R. Barlow retired on June 30, 1969, from Heller Tool Co. in Newcomerstown, Ohio... Also recently retired is Rocco N. LaPenta. He is now living in New Britain, Conn.

1933

After spending more than 32 years with Friden, Inc., Thomas E. Decker has joined Computer Services Center, Inc., in Worcester. The company is a newly formed subsidiary of Worcester Bancorp, Inc., and Tom is a salesman for the company.

Arthur O. Andersen has been named general patent attorney by The Trane Co. in La Crosse, Wis. Art joined Trane in 1947 after ten years as a patent examiner for the U.S. Patent Office... The manager of the Fabrics and Finishes Plant of E. I. duPont deNemours & Co., Inc. in Leominster, Mass., is Albert O. Bell.

1934

Liberty Mutual Insurance Co. employs Charles J. Egan as a marketing research associate... Howard E. Stockwell is director of hydro production for the New England Power Co. in Lebanon, N.H. He has been with the company for 35 years.

1935

Karl H. Bohaker is vice president, marketing, for Potter & Brumfield, a division of American Machine & Foundry Co. He resides in Princeton, Ind... J. Russell Hemenway is a sales proposal engineer for Heald Machine Co. in Worcester... John J. Molloy is a district chief for the U. S. Geological Survey's Water Resources Div. He is located in Columbus, Ohio... Robert B. Taylor is president and treasurer of R. B. Taylor Corp. in Albany, N.Y.

1938

Dr. Gilbert G. Ashwell is chief of the laboratory of biochemistry and cellular metabolism at the National Institute of Arthritis and Metabolic Diseases in Bethesda, Md. . . Robert A. Evans recently became an honorary member of the Univer-

sity of Connecticut chapter of Pi Tau Sigma. a national honorary fraternity of mechanical engineers. Bob works for Northeast Utilities Co. and lives in W. Hartford, Conn... The Heat Transfer Div. of American Standard. Inc. has appointed Ernest E. Gustafson manager, marketing research-heat exchangers in Buffalo, N.Y. He lives in Elma, N.Y... Philip K. Hathaway is a senior customer engineer for IBM in Concord, N.H... Warren R. Spofford has been named an account executive in the Grinding Wheel Div. of Norton Co., and he is responsible for sales in the Los Angeles and Arizona areas. He resides in Santa Monica, Calif. . . Earle R. Vickery, Jr. has been named superintendent of the state skating rink in Worcester. His responsibilities include supervision of state swimming areas in the summer.

1939

Walter L. Longnecker has been named vice president — power components for Gould, Inc., in Cleveland, Ohio... John T. Rushton is employed as general manager of Publishers Forest Products Co. in Anacortes, Wash.

1940

George S. Bingham is chief engineer for the Bonneville Power Administration in Portland, Oregon... Raymond B. Shlora is president and treasurer of H. H. Brown Shoe Co., Ltd., in Montreal, Canada... Frank C. Brown & Co. of Ridgewood, N.J., employs Charles J. Wilde as their vice president and general manager.

1941

Irving A. Breger reports that he is a visiting professor of chemistry at the University of Maryland and that he is also working with lunar samples in conjunction with NASA's Ames Research Center, Moffett Field, Calif... Stanley S. Ribb writes that he was recently promoted to vice president and general manager of the Blackstone Valley Electric Co. in Lincoln, R.I... Emhart Corp. of Hartford, Conn., has announced that Ralph W. Stinson has been appointed manager of planning... Alfred E. Winslow is now a group leader with the Borden Chemical Co. in Bainbridge, N.Y. He lives in Unadilla, N.Y.

Donald T. Atkinson is a consultant for the General Electric Co. in Philadelphia, Pa...F. Douglas McKeown, assistant to the director of research at WPI, has been appointed by Pres. Hazzard to direct the WPI Corporate Associates Program, an organization of Central New England corporations to promote mutual needs and interests and to facilitate the relationship of the member firms with the college.

1942

John B. Wright informs us that he is very busy at the Air Force's Cambridge Research Labs at Hanscom Field, Bedford, Mass. He is engaged in high altitude rocket systems development... Ralph G. Fritch has been appointed assistant to the director of Boston's Museum of Science.

1943

Col. Paul G. Atkinson, Jr., is director of technology applications at Andrews AFB, Md... Donald H. Russell reports that he is still at Grumman Aerospace Corp., Bethpage, N.Y. He is employed as an engineer and has been with the company for ten years... William A. Walsh, Jr., informs us that after making several moves in recent years, he has finally settled back in Manchester, N.H. He is employed by Comstock & Westcott, Inc., Cambridge, Mass., as a senior product engineer. He has also done an extensive amount of work developing snowmaking machines.

1944

L. Howard Reagan is manager of support-earth station div. of the Communications Satellite Corp. in Washington, D.C. (See picture this page.)... Kimball R. Woodbury, president of Woodbury and Co. in Worcester, has been named a trustee of both Worcester County Institution for Savings and Worcester Academy.

1945

John T. Hegeman reports that he is now resident mill manager for Crestbrook Pulp & Paper, Ltd., in Skookumchuck, B.C.

1946

John H. Barrett has been appointed assistant vice president and corporate secretary of Charles T. Main, Inc., of Boston,

Mass... Ernest S. Hayeck has been appointed a special justice in the Worcester (Mass.) Central District Court. He is a graduate of Boston University Law School... Richard C. Lawton writes: "My new company, Buell Automatics, Inc., is now three years old and has reached sales of \$1 million." He is president of the company... Calvin F. Long informs us: "Still with Elco Corp. in Detroit as district manager, selling gear lubricants to automotive type customers. My wife and I are looking forward to a journey to Worcester in 1971 for our 25th class reunion."... Carl F. Simon, Jr., is manager of engineering, gear motor business, for General Electric Co. in Paterson, N.J.

1946B

Garabed Hovhanesian is manager, product planning industrial marketing, in the specialty appliance dept. of the General Electric Co. in Ashland, Mass. He lives in Shrewsbury... August C. Kellermann is manager, Petrochemical International Div., of Continental Oil Co., Saddle Brook, N.J.

1946D

John C. Meade, who is a district manager for Ashland Oil & Refining Co., Ashland Chemical Co. Div., writes: "Our tenth child and fifth daughter arrived last April." Phil lives in Palos Verdes Peninsula, Calif.

1947

Samuel Ringel is president of Dynaloy, Inc., in Hanover, N.J... The State of New Hampshire has named Edward T. Swierz bridge engineer for the Dept. of Public Works and Highways. He will direct and coordinate all activities of the bridge design and bridge maintenance divisions.

John P. Harding, Jr. recently became vice president of engineering in the Data Systems Div. of Litton Systems, Inc., in Van Nuys, Calif. He and his family have also

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their newly-completed into moved "hacienda" in Westlake Village, Calif. . . The manager of engineering standards at General Electric's Oklahoma City (Okla.) facility is James J. Hierl. . . Roger B. Williams, Jr. is manager of research for the Toledo Scale and Systems Div. of Reliance Electric Co. in Toledo, Ohio. His family consists of his wife, Madeleine; two sons, Ned, who attends Bowling Green Univ., and Pete, who will be a freshman at Baldwin Wallace College next fall; and two daughters, Sheila, 13, and Sally, 11.

1948

Robert E. Eilertson is in the sales dept. of Benefacts, Inc., Baltimore, Md. . . Robert W. Henderson has been named a trustee of New Salem (Mass.) Academy. Bob is employed at Rodney Hunt Co., Orange, Mass., as manager of its water control equipment div. . James M. Mullarkey has been promoted to assistant vice president by Charles T. Main, Inc., Boston, Mass. Jim lives in Westwood, Mass. . Daniel H. Sheingold reports that he is now with Analog Devices, Inc., of Cambridge, Mass., as director of marketing and editor of "Analog Dialogue."

David L. Anthony has been transferred by Texas Instruments, Inc., from Dallas, Tex., to Houston. He is now manager of TTL Integrated Circuit Assembly... Gordon E. Hall is the resident master (math and physics) at Laurelcrest Preparatory School in Bristol, Conn... Dr. Carlton A. Lane presented a ten-minute paper at the Nov. 1969 meeting of the S. E. Section of the American Physical Society, held at the Univ. of Fla., Gainesville.

1949

John H. Beckwith is a division manager for Esso Research & Engineering, Florham Park, N.J., and he is currently working overseas. . . ITT Gilfillan, Inc., of Van Nuys, Calif., employs Fred J. Brennan, Jr., as their director of marketing. . . Samuel E. Franc, Jr., is a construction manager for Systech Construction Corp., Walnut Creek, Calif. . . Also in California is Raymond J. Remillard. He is manager of mechanical design for Amelco Semiconductor in Mountain View, Calif. . . Union Camp Corp., Wayne, N.J., has named Edward D. Wilcox, Jr., as general manager of its newly-formed engineered systems div.

1950

General Electric Co. has named Carl D. Ahlstrom product sales manager of microwave devices. Carl is located in Owensboro, Ky...John O. Archibald, Jr., continues to be employed as a field sales engineer by The Carborundum Co., Niagara Falls, N.Y...

Polaroid Corp., Cambridge, Mass., recently promoted John P. Burgarella to senior dept. manager, electronics dept... His brother, Joseph J. Burgarella, Jr., is a staff engineer at Avco Corp., Wilmington, Mass... California and Hawaiian Sugar Co. employs Philip J. Nyquist at their Crockett (Calif.) refinery as an industrial engineer.

John F. Brierly is president of Valuation Counselors, Inc., a new national firm of appraisers and valuation counselors which recently opened its doors in Chicago, III. Jack was formerly vice president of Marshall and Stevens, Inc. in Chicago... The Knolls Atomic Power Laboratory of the General Electric Co. in Schenectady, N.Y., recently announced that Dr. Herman A. Nied had joined the Laboratory's Materials Development Operation as an analytical mechanics engineer... Lester J. Reynolds is manager of marketing research at American Cyanamid's Organic Chemical Div. in Bound Brook, N.J.

1951

William T. Baker is assistant to the president at Litewate Transportation Equipment Co., Milwaukee, Wis...H. Stuart Dodge is a project engineer in the missile and space div. of the General Electric Co., Valley Forge, Pa. In January he wrote: "I am on temporary assignment at the Jet Propulsion Laboratory, Pasadena, Calif., working on the Mariner Mars Orbiter Program scheduled for launch in May, 1971."... American Optical Corp., Framingham, Mass., employs Edward L. Louis as manager of mechanical services. . . Albert A. Mahassel is a patent counsel for the Xerox Corp., Rochester, N.Y... On sabbatical leave from the University of Kentucky is Dr. Donald E. Sands. He is at the University of Florida in Gainesville from January to June, 1970. He recently had a book published entitled "Introduction to Crystallography".

1952

Philip B. Crommelin, Jr., has been promoted from chief engineer to vice president — engineered products at Research-Cottrell, Bound Brook, N.J... Stuart R. Hathaway is plant manager at American Cyanamid, Azusa, Calif. He had previously been in Stanford, Me., with Wasco Chemical Co. and American Cyanamid for 13 years.

Jean T. Farley is sales manager in the Hydraulics Div. of Planet Products Corp. in Cincinnati, Ohio... The manager of Special Systems at Motorola, Inc., in Washington, D.C., is Richard C. Gillette... We have learned that Philip J. O'Connor was recently named assistant sales manager for the Resins and Plastics Div. of the Ashland Chemical Co. in Englewood Cliffs, N.J... The vice

president of American Science & Engineering, Inc., in Cambridge, Mass., is *Henry Shapir*o. He lives in Framingham.

1953

David M. Elovitz has been promoted to chief engineer by Boston Air Legasse Corp., Medford, Mass. Dave joined the company in 1968 as a sales engineer... Philip J. Kaminsky writes: "I am now associated with the investment banking firm of Ladenburg, Thalmann & Co. in Boston, Mass., as an institutional security (research) analyst and specializing in high technology companies/products."... Gene J. Kucinkas is the founder, president, and chief executive officer of TOTAL Computer Systems, Inc., an affiliate of LFE Corp., and is located in Newton, Mass.

1954

Andrew J. Morgo is product marketing manager for Honeywell, Inc., in San Diego, Calif...G. Henry Utter, SIM, is manufacturing manager at Crompton & Knowles Corp. in Worcester.

1955

Richard C. Oldham is an associate with Ranger Farrell & Associates in Irvington-on-Hudson, N.Y.

1956

Richard N. Bazinet is a supervisor with Singer-General Precision Inc. — Link Div. in Houston, Texas. He writes the following: "Transferred to the command module section as a supervisor in applied mechanics/ visual group last June. While at Cape Kennedy I attended a party where Astronauts Armstrong, Collins, and Aldrin were present. Had the honor of losing to Collins and beating Armstrong at pool. I was very much impressed by the 'next-door-neighbor' attitude of the astronauts."... Charles R. Healy is manager of standards and procedures for Ebasco Services, Inc., of New York City. He lives in Jackson, Mich.

1957

Warner I. Clifford is a resident engineer for Stone & Webster Engineering Corp., and he is presently on assignment in Shipping-port, Pa. His permanent mailing address is Auburn, Mass... Dr. Frederick P. Mertens is a research chemist for Texaco, Inc., at their research center in Beacon, N.Y... Worcester Valve Co. of W. Boylston, Mass., has Alex C. Papaioannou as their sales manager in their flowmation div. He had previously been with the Foxboro Co. for 10 years... Wyman-Gordon Co. of Worcester has ap-

pointed Oscar O. St. Thomas sales manager of product and market development... Richard M. Silven is director of new business development for the Bundy Corp., Warren, Mich.

1958

Married: Philip L. Morse to Miss Carol Lee Wells of Berkeley Heights, N.J., on November 8, 1969. One of the ushers was Collins M. Pomeroy, '57. Phil is an engineer with Eastman Kodak Co. in Rochester, N.Y.

Peter C. Dirksen, Jr., is director of industrial development for the Worcester (Mass.) Gas Light Co... Joseph B. Gill is vice president - sales for the Keene Corp., Muskegon, Mich... The Boeing Co. employs Walter Janas, Jr., at Minot AFB, N. Dakota as a tool and production planner... Carl R. Johnson is a senior engineer with Shell Chemical Co. in Houston, Texas. . . Marian C. Knight writes: "I am now employed on Kwajalein, Marshall Islands, by Sylvania Electronic Systems as a systems engineer on experimental radar. A fellow classmate, Roger A. Jolicoeur, is also here. It's a small world."... Joel Korelitz is vice president in charge of systems engineering for Daconics, Sunnyvale, Calif. . . Dr. Sherman K. Poultney is an assistant professor in the dept. of physics and astronomy at the University of Maryland... Andrew A. Szypula informs us: "After spending a year-and-a-half at the Naval Ship Engineering Center in Washington, D.C., I rejoined the Marine div. of Bethlehem Steel Corp. in Sparrows Point, Md., and hold a position of marine engineer in charge of all new ship construction."... Norman J. Taupeka, a supervisory engineer of the Electronics Command's Communication/Automatic Data Processing Laboratory at Fort Monmouth, N.J., was awarded the Dept. of the Army official commendation for outstanding performance of duties in the Fall of 1969... Jamesbury Corp. of Worcester has appointed Joaquim S. S. Ribeiro controller. He joined the company in 1958.

1959

Born: To Mr. and Mrs. Arthur Olsen, Jr., a son, James Eric, on June 28, 1969. Art is a supervisor in the transmission transformer and inductor group with Bell Telephone Labs in N. Andover, Mass.

Walter M. Gasek is production manager for Colonial Candle Co. of Cape Cod, Inc. in Hyannis, Mass... Marshall P. Krupnick recently passed the New York State Degree Bar Exams and was sworn into practice at the New Jersey Bar... North American Rockwell Corp. employs William A. Saimond as a fuel cell cryogenics engineer at Kennedy Space Center, Fla... Edward A. Saulnier continues to be employed by IBM in Worcester as an advisory systems engineer... Engineering Consultants of Denver,

Colo., employs Michael P. Saunders. He is currently working in Bandung, Indonesia... Robert V. Sharkey recently left the Singer Co. in Bridgeport, Conn., and he is now employed by Corometrics Medical Systems, Inc., of N. Haven, Conn., as marketing manager... Alexander Swetz, Jr., was recently promoted from associate engineer to engineer in the electric distribution dept., Bergen Div., of the Public Service Electric & Gas Co. of New Jersey... Union Carbide Corp. employs John Wary in Union, N. I.

Army Major Joel T. Callahan has received the Bronze Star Medal for outstanding meritorious service in connection with military operations against a hostile force in Vietnam... Aero-Go, Inc., has named Frank M. Cohee manager of administration. The company, which is a leading manufacturer of air cushion devices used in manipulating large, heavy materials such as aircraft scaffolding, is located in Seattle, Wash... Joseph A. Lenard has been promoted to senior engineer at IBM's Components Div. in E. Fishkill, N.Y... Ronald L. Merrill has joined the 3 M Co. in Freehold, N.J., as a project engineer.

1960

Born: To Mr. and Mrs. Sang Ki Lee, their second child and son, Jonathan Hongsupp, on January 17, 1970. Sang recently



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joined ITT's patent dept. in Nutley, N.J., as senior patent counsel. He is also president of the Northern New Jersey Alumni Chapter...To Mr. and Mrs. Donald L. Lince, their third child and second son, Matthew David, on June 6, 1969. Don is presently an electrical engineer in the acoustics branch of the Human Engineering Labs at Aberdeen (Md.) Proving Ground.

Dr. Robert A. Condrate presented an invited paper, "The Infrared and Laser Raman Spectra of Apatites," at the 10th European Congress on Molecular Spectroscopy in Liege, Belgium, in September, 1969. Dr. Condrate is an assistant professor at Alfred (N.Y.) University. . . David R. Geoffroy is employed by Coppus Engineering Co. of Worcester as a senior design engineer... Hercules, Inc., of Parlin, N.J., employs Norman M. Hardy as their operating dept. supervisor. . . Polaroid Corp. of Waltham, Mass., employs Richard A. Loring as a senior process engineer in their film div... Robert J. McElroy is a graduate assistant in the sociology dept. at the State University of New York in Binghamton. . . H. David Sutton is a member of the technical staff of Sanders Associates, Nashua, N.H. . . Philip R. Pastore, Jr., writes: "I have been working for C. W. Blakeslee & Sons, Inc., of New Haven, Conn., since January, 1961. On November 1, 1969, I was promoted to chief engineer of the prestressed concrete div. Prior to my promotion, I was project engineer in charge of structural design and construction of King's Plaza Parking Garage in Brooklyn, N.Y., the largest parking garage in the U.S., housing 4000 cars."

1961

Born: To Mr. and Mrs. Robert R. Hale, their first child and son, Robert David, on September 27, 1969. Bob is a project manager for PEK of Sunnyvale, Calif., and works on special high intensity arc lamps.

Edward J. Boduch is a systems manager for Intercontinental Manufacturing Co., Garland, Texas... Prof. Roger R. Borden, MS, was recently honored by more than 200 people upon his retirement as lay minister of the Congregational Church of Petersham, Mass. Prof. Borden is an associate professor of mechanical engineering at WPI. He resigned from his lay pastorship to devote more time to education. . . Thomas K. Caste is a producibility engineer with the General Electric Co. in Portsmouth, Va... Loctite Corp. of Newington, Conn., has announced that David M. Chesmel has joined their new ventures staff. Dave lives in Kensington. Conn., and was formerly with FMC Corp. in Detroit, Mich. . . Charles S. Cook is a senior civil engineer with the State of New York, Dept. of Transportation... S. Leon Gazoorian lives in Englewood, N.J., and is an account representative for IBM Corp. . . Dr. John B. Lewis is a member of the technical staff at Bell Telephone Labs, Whippany, N.J... Joseph W. Little, MS, is an associate professor of law at the University of Florida in Gainesville... Daniel F. O'Grady, Jr., is a senior programmer for New England Telephone & Telegraph in Boston, Mass. . . White Engineering Corp. of Bristol, Pa., employs Thomas J. Pearsall as chief process engineer. . . Walter E. Pillartz, Jr., is supervisor of transmission services for Southern New England Telephone Co. in New Haven, Conn... The state of New York, Health Dept., employs David W. Prosser as a senior air pollution engineer in Syracuse... David M. Raab is a staff engineer at MIT's Instrumentation Lab in Cambridge, Mass. . . Brown University recently awarded William A. Wolovich, MS, a PhD degree in electrical sciences. Dr. Wolovich is currently employed at NASA's Electronics Research Center in Cambridge, Mass.

1962

Married: Frank J. Sokol, III to Miss Miriam Chisholm Davis of Middletown, Conn., on December 27, 1969. Frank is assistant to the executive vice president at Research-Cottrell. Inc., Bound Brook, N.J.

R. P. Durkin & Co., Inc., has announced that they have opened a franchised brokerage office in Nashua, N.H. and that Robert J. Bagdis is a co-manager of that operation... Robert A. Eddy, SIM, has been named product quality manager at Wyman-Gordon Co. of Worcester... Dr. John E. Lukens received his PhD degree from Cornell University in 1969. He reports that he is presently self-employed as a consultant in remote sensing and that for the spring semester of 1970 he is a lecturer in the Geography Dept. at the University of Rhode Island... Another recent doctorate degree recipient is Harry L. Rook. He received his degree from Texas A&M University in 1969 and is presently employed as a research chemist at the National Bureau of Standards in Washington, D. C. . . Walter D. Wadman is an area operating engineer for the Connecticut Light & Power Co. in Winsted, Conn.

Dr. Michael A. Davis, who received a doctor of science degree in radiation biology from Harvard School of Public Health in 1969, is principal research associate in nuclear medicine at Harvard Medical School and Peter Bent Brigham Hospital in Boston, Mass. He was recently the recipient of the James Picker Scholar Award in radiological research granted by the James Picker Foundation upon the recommendation of the National Academy of Science — National Research Council... Victor P. Dufault

writes that he has left the Navy's submarine service after seven years and is now a maintenance engineer at Chas. Pfizer & Co., Inc., in Groton, Conn. He and his wife, Paula, have one son, Michael, age one... General Electric's Binghamton (N.Y.) facility is the location of Ronald C. Gagne. He is a systems engineer... Army Capt. Thomas G. Holland is in Germany, having completed the field artillery course as a signal corps officer... IBM Corp. has transferred Robert P. Wilder to their regional office in Washington, D.C. Bob, his wife, Jeanne, and their three children live in Arnold, Md.

1963

Alfred A. Bartkiewicz, Jr., is a sales engineer for the Farrel Co. in Ansonia, Conn... Also employed as a sales engineer is James M. Kelly, Jr. He is located in Kenmore, N.Y., where he works for Augustine-Honsberger Associates, Inc. . . Edward J. Polewarczyk is an engineering service and products administrator for Dynamic Controls Corp., Windsor, Conn. . . William C. Zinno informs us: "I am presently living in Worthington, Ohio, and I was recently promoted to production superintendent at Industrial Nucleonics Corp., Columbus, Ohio. I finished my MBA at the University of Michigan in April, 1968, before joining Industrial Nucleonics, and I have two sweet children, Terri Lynn and Michael James."

Dr. Richard A. Kashnow has joined General Electric's Research and Development Center in Schenectady, N.Y., as a physicist in the Information Sciences Laboratory... Arnold Greene Testing Laboratories, Inc., in Natick, Mass., have appointed William J. Ladroga, Jr. as their chief metallurgist... The assistant division line superintendent at Massachusetts Electric Co. in Worcester is Robert M. Mellor. . . Army Capt. David G. Nevers left in March for his second tour of duty in Vietnam. On his first tour he received the Bronze Star and an award from the South Vietnamese government... The president of our North Shore Alumni Chapter, Dennis E. Snay, has been named local sales manager - commercial by Massachusetts Electric Co.'s Marlboro operations center.

1964

Married: 1/Lt. Edward P. laccarino to Miss Susan P. Reheis of Webster Groves, Mo., on June 21, 1969. Ed, who received his PhD from the University of Wisconsin last year, is in the Army Chemical Corps, stationed at Pine Bluff Arsenal, Ark... Raymond G. Johnson, Jr. to Miss Ruth Anne Walton of Grand Rapids, Mich., on

November 28, 1969. Ray is an electrical engineer with Sikorsky Aircraft in Stratford, Conn., and is a graduate student at U. Conn.

Robert B. Bridgman received a Master of Aerospace Operations Management degree from the University of Southern California in February, 1970. He is employed by The Boeing Co. at Vandenberg AFB, Calif... Edward L. Cure is assistant manager of Cure's Furniture in Worcester. . . Dr. Warren J. Eresian, Jr., MS, is now a Captain in the U. S. Army and is stationed at Fort Belvoir, Va...Capt. E. James Hanna, III, is now stationed at Wright-Patterson AFB, Ohio. . . Bell Telephone Labs, Holmdel, N.J., employs David V. Helsing as a member of their technical staff... John H. Schmidt is a university electronics engineer at Adelphi University, Garden City, N.Y. . . New Jersey Zinc Co. of Palmerton, Pa., employs Maurice R. Silvestris as an environmental control engineer. He lives in Allentown, Pa. . . Stanlev Szymanski writes: "Now living in Golden Valley, Minn., and working as a sales engineer for Hooker Chemical Corp. We have two boys, Matthew (3 years old) and Charles (8 months old)."... John F. Wetherell is an instrument engineer with Polaroid Corp., Waltham, Mass.

Kenneth N. Robbins has been promoted to senior associate engineer at IBM Corp.'s Systems Development Laboratory in Kingston, N.Y... Frederic C. Scofield, III is a graduate student in nuclear engineering at the University of Arizona... The recent recipient of a PhD degree from Yale University, Army Lt. Elliot F. Wyner is now stationed at Ft. Monmouth, N.J.

1965

Married: Francis X. Cantello to Miss Elizabeth J. Karwich of Wadsworth, Ohio, on August 30, 1969. George L. Humphrey was best man. Frank is a products engineer for B. F. Goodrich Co. in Woodburn, Ind.

Born: To Mr. and Mrs. Chester J. Sergey, Jr., their second child and first daughter, Susan, on September 24, 1969. Chester is a sales engineer for Enthone, Inc., of W. Haven, Conn., and he lives in Wolcott, Conn... To Mr. and Mrs. William E. Zetterlund, their second child and first son, Adam Eric, on November 27, 1969. Bill received an MBA degree from Inter-American University in Puerto Rico while he was stationed there in the Navy. He is presently a construction manager for Brockwell, Longe, McManus of Latham, N.Y., and he is living in Athens, N.Y.

Donald C. Carlson is a product engineer for the Torrington Co., Torrington, Conn., and he is presently on assignment in Japan for a year. . . Also employed by the Torrington Co. is David W. Geiger. Dave lives in Torrington... Dr. William F. Gasko, MS, has been named research director at Millis Research, Inc., Millis, Mass. He is a cofounder of the company...Dr. Arthur Gauss, Jr., MS, is a research physicist at the Ballistic Research Lab at Aberdeen (Md.) Proving Ground... Vision Systems, Inc., Bedford, Mass., employs Robert L. Johnson as a senior programmer/analyst. . . Clinton F. Kucera, Jr., is employed by General Electric Co. in Edmore, Mich., as a specialist in employee relations .-. Dr. Thomas F. Moriarty, who received his PhD degree from the University of Illinois in 1969, is employed as a staff associate at Gulf General Atomic, San Diego, Calif. . . John W. Oldham, Jr., is vice president of John Oldham Studios, Inc., in Wethersfield, Conn. . . RCA in Van Nuys, Calif., employs Anthony A. Smalarz, . . Alfred G. Symonds is a field service representative for the General Electric Co. at Vitro Labs, Silver Spring, Md. . . Takashi Tsujita is a project engineer for Thomas & Betts, Inc., in Elizabeth, N.J. . . Dr. John T. Wilson writes: "I received a PhD degree in civil engineering - structures in August, 1969, from Ohio State University. I am employed by Paul J. Ford, Structural Engineers, in Columbus, Ohio."... Arthur M. Zweil, Jr., is a project engineer for Sylvania Electric Products in Danvers, Mass.

Air Force Capt. Robert H. Jacoby is an aircraft maintenance staff officer with an APO San Francisco address. . E. I. duPont deNemours & Co., Inc., Chattanooga, Tenn., is the location of Charles R. Seaver. He is a process engineer. . . Dr. Anton J. West, Jr. is a scientist in Mountain View, Calif. He earned his PhD in materials science last year at Stanford.

1966

Married: Ronald D. Finn to Miss Billie Elaine Wilkerson of Roanoke, Va., on December 7, 1969... Robert P. Kokernak to Miss Jean Elizabeth Duffy of Chelmsford, Mass., in December, 1969. Bob is presently studying for his doctorate at WPI... Donald R. Nitsche to Miss Nancy Anne Dowd of Worcester, Mass., on October 18, 1969. Don received his MS last year from URI and is an actuarial student in the group department of Mutual Benefit Life Insurance Co., Newark, N.J.

Born: To Mr. and Mrs. William F. Elliott, their first child, a daughter, Penelope Ann, on December 27, 1969. Bill is assistant director of admissions at WPI.

Brian N. Belanger is a PhD candidate at the University of Rhode Island... Selfemployed as a consultant and promoter in Allston, Mass., is *Philip S. Blackman*. He received an MS degree from MIT in 1969... Jivraj N. Borad, MS, is a design engineer for a Philadelphia (Pa.) firm, Cata-Construction Co... Roland C. Bouchard has been promoted to first lieutenant in the U.S. Air Force. He is an electronics engineer at Hill AFB, Utah... John W. Bowen is an MBA candidate at Harvard Business School. He recently was named a George F. Baker Scholar which is an honor bestowed upon students in the top five percent of the second-year students at the school... George M. Elko is working toward his doctorate degree and is a teaching assistant at Stevens Institute of Technology, Hoboken, N.J... Applied Information Industries of Moorestown, N.J., employs Paul R. Malnati as a project engineer... Raymond G. O'Connell, Jr., is a design engineer in the medical electronics div. of Hewlett-Packard Co., Waltham, Mass. Ray lives in Burlington, Mass... Chester J. Patch, III, is a field engineer for the Bechtel Corp. of Vernon, Calif. Joe lives in Farmington, New Mexico... Paul F. Peterson is a systems analyst/programmer in telecommunications for Cincinnati Milling Machine Co. in Cincinnati, Ohio.

Christopher G. Bradbury is with the Reece Corp. in Waltham, Mass. . . General Motors Corp., AC Electronics Div., is the location of John H. Carosella. He is a senior project engineer at the Milwaukee (Wis.) facility... Albany, N.Y., is the location of George M. Preston. He's a field engineer for General Electric Co...Dr. James A. Ratches is a research physicist for the Army's Night Vision Laboratory at Ft. Belvoir, Va...We have learned that Mordechai Turi, MS, is in charge of the Mechanical Development Dept. of Kendall Co. in Walpole, Mass. He also teaches at South Shore Hebrew High School and lectures frequently to study groups on Arab-Israeli affairs.

1967

Married: Army Capt. Lawrence R. Gooch to Miss Judith Anne Colarusso of Millbury, Mass., on April 21, 1968. Larry is currently stationed with the 1st Battalion, 44th Artillery, at Dong Ha, Vietnam. . . Noel M. Potter to Miss Gail B. Aganier of Plattsburgh, N.Y., on August 9, 1969. Noel, who earned his MS from Cornell last June, is now working toward his PhD from the same university. One of his projects has been to analyze samples of moon rock and dust brought back by Apollo 10 in July. . . John E. Sonne to Miss Anne Levin of Trappe, Pa., on November 30, 1969. John is a research assistant at the University of Pennsylvania Hospital in Philadelphia. . . Richard E. De-Gennaro to Miss Marcia G. Karmolinski of Madison, Conn., on January 17, 1970. He is employed as a mechanical engineer by United Illuminating Co. of Bridgeport, Conn. The couple lives in Branford, Conn.

Capt. John P. Dow is a radio officer with the U.S. Army in Phu Bai, Vietnam. . . Charles H. Goodspeed, III, is studying under a NASA Fellowship at the University of Cincinnati. He received his masters degree from WPI in 1969. . . Frank T. Jodaitis was recently promoted to first lieutenant in the U.S. Army. He is stationed at Da Nang, Vietnam... Thomas E. Kelley is a plant technical service engineer in Everett, Mass., for Monsanto Co. . . Leonard J. Lamberti is a graduate student at the University of Massachusetts... Ens. Robert G. Mc-Andrew, who received an MS degree from Texas A&M in 1969, is presently stationed with the U.S. Navy, Civil Engineer Corps, at Guantanamo Bay, Cuba. . . Employed as an engineer in systems research at Corning Glass Works in Corning, N.Y., is Harry E.

Arthur F. Amend, MS, a physics and chemistry teacher at Ridgefield (Conn.) High School, has been named acting head of the Science Dept. there... Kimberly-Clark Corp. in New Milford, Conn., is the location of John R. Cahalen. John received his MS in ChE last year from U. Conn. . . Ronald A. Jolicoeur is now product engineer, sales, at Buffalo Forge in Buffalo, N.Y... Roy P. Lindquist, who received his MS last year from the University of Aberdeen (Scotland), is now a second lieutenant in the U.S. Army...John E. Rogozenski, Jr. is at the University of Massachusetts, Amherst, in the Industrial Engineering Dept... In Vietnam, 1/Lt. Stephen B. Statz has received the Army Commendation Medal for meritorious service while serving as the officer in charge of his base camp... New England High Carbon Wire Corp., Millbury, Mass., is the location of Robert D. Watkins.

1968

Married: Edward F. Cannon, Jr. to Miss Laura Mackey of Eureka, Kan., on September 6, 1969. Ed is teaching and coaching at Worcester Academy. . . Robert R. Demers to Miss Barbara M. Sather of Riverside, R.I., on December 31, 1969. They are living in Riverside, R.I... David A. Hopkinson to Miss Rosemary Matta of Pawtucket, R.I., on November 22, 1969... Peter E. Konopa to Miss Norma Johansen of Hamden, Conn., on December 27, 1969. Among the ushers was Richard E. DeGennaro, '67. Peter is employed by the Olin Corp. . . Lt. Robert A. Wiley to Miss Linda Elizabeth Martin of Arlington, Va., in September, 1969. Richard A. Mayer was best man. Bob is stationed at Fort Bliss, Tex., at present.

Ens. John J. Bresnahan, Jr., completed Naval Officer Candidate School in the fall of

1969 and was assigned to the Naval Construction Battalion Center at Port Hueneme, Calif... Employed in Rexdale, Ontario, by Abell Waco Ltd. is Gaetano A. Decaro. . . Army 2/Lt. John R. Hilyard is stationed at the Lexington (Ky.) Blue Grass Army Depot... Lawrence E. Klein, MS, is an associate engineer in the applied physics lab at Johns Hopkins Univ... Air Force 2/Lt. Richard Kung is an electronic engineer at McClellan AFB, Calif. . . Another member of the class who is in the armed forces is Walter C. Lynick. He is in the Army and is stationed in Vietnam as a technical advisor in construction... Cary A. Palulis is an industrial sales representative for the Humble Oil & Refining Co., Linden, N.J. Cary lives in Old Bridge, N.J... Peter A. Saltz writes: "I received an MS degree from the University of Rochester in June, 1969. My wife and I are now both working toward PhD degrees."... Richard J. Scaia is a district sales engineer in South Bend, Ind., for the Torrington Co. of Torrington, Conn. . . We have learned that Stephen C. Schwarm is an engineer with E. I. duPont deNemours & Co., Inc., in Wilmington, Del. . . Stephen J. Stadnicki, Jr., recently received a master of arts degree in chemical engineering from Princeton Univ.

Wayne E. Blanchard, who is production supervisor at Johnson & Johnson's Surgical Adhesives Mill in New Brunswick, N.J., has received that company's manufacturing award in recognition of his contributions as an outstanding production supervisor... Berton H. Gunter is in the Army in Germany, with one more year to go. Bert intends to return to the University of Illinois graduate school in 1971... Douglas G. Ferry is employed by Eastman Kodak Co., Rochester, N.Y., as a quality control engineer.

1969

Married: Michael M. Hart to Miss Ellen Blanche Mayhew of Hartland, Vt., on November 22, 1969. John T. Hart, '65, was best man for his brother. Mike is employed by Raytheon's missile systems div. in Bedford, Mass... David Lieberman to Miss Phyllis Robin Silverman of Worcester, Mass., on November 22, 1969. Carlos N. Spitz, '68 was best man, and among the ushers were Neil M. Glickstein, Gregory E. Pollack, and Lawrence I. Waxler, '72. Dave is enrolled at Suffolk University School of Law and is employed by G. E. Co. in Fitchburg, Mass. . . 2/Lt. Clifford M. Obertuck to Miss Pamela Bitter of No. Brookfield, Mass., on October 4, 1969. Cliff is stationed at Fort Monmouth, N.J.

Air Force 2/Lt. Kenneth C. Amend, MS, is stationed at Craig AFB, Ala... James F. Baxendale is a second lieutenant in the U.S. Army... William A. Bensch, MS, is a doc-

toral degree candidate in the physics dept. at WPI. . . Richard C. Carlson is a military policeman in the U.S. Army and is stationed at Ft. Gordon, Ga. . . Riley Stoker Corp. of Worcester employs Stephen A. Erikson as a chemist... Also employed in Worcester is Stanley J. Goldman. He is an estimator and cost analyst for Herbert Engineering, Inc. . . Living and working in Jeanette, Pa., is James T. Heinrich. He is an applications engineer for the Elliott Co. . . James B. Hills is a test engineer for Worcester Valve Co. of W. Boylston, Mass... New England Telephone & Telegraph Co. employs David H. Johnson as a dial service manager in Springfield, Mass. Dave lives in Manchester, Conn. . . Vallabhdas V. Kantesaria, MS, is a project engineer for Combustion Engineering of Windsor, Conn... Shell Chemical Co. of Princeton, N.J., employs Curtis S. Kruger as a project engineer... John H. Murphy is a research assistant in the Cryogenic Lab at MIT. . . James B. Myers is an associate engineer with the Xerox Corp. in Webster, N.Y., and he lives in Penfield, N.Y... Sanders Associates employs Gregory E. Pollack as a market research analyst in Plainview, N.Y. Greg lives in Mineola, N.Y... Gerald M. Robbins is a graduate student at the University of Illinois. . . Rashmikant C. Shelat, MS, is an assistant engineer for the Dept. of Highways in New York City... General Electric Co. employs Francis W. Skwira, MS, as a cognizant engineer in Schenectady, N.Y. .. John E. Watson is a junior project engineer in the manufacturing dept. at American Cyanamid, Wallingford, Conn. . . Among the members of the class who are in the service are: Army Lt. John C. Gavitt, stationed at Ft. Gordon, Ga.; Navy Ensign Ronald C. Lewis; Air Force 2/Lt. Douglas A. Nelson, who is in pilot training at Vance AFB, Okla.; and Navy Ensign Peter E. Nott, who is stationed in Pensacola, Fla.

We have learned that the following members of the class are in the service: 2/Lt. Brian T. Abraham is in the Army Air Defense Artillery; 2/Lt. Craig L. Mading is at Mather AFB, Calif. for navigator training; Paul V. Norkevicius is a second lieutenant in the Army; and Robert J. Scott is serving with the Army in Vietnam. . . Cameron P. Boyd is a supervisory assistant for New England Telephone & Telegraph Co. in Framingham, Mass. . . Merck & Co., Inc., in Danville, Pa., is the location of Lawrence F. Folloni, Jr. . . Joel P. Greene is employed by the law firm of Bowditch, Gowetz & Lane in Worcester. . . In Boston, Mass., Charles A. Kalauskas works for Metcalf & Eddy, Inc., as a highway engineer... United Illuminating in New Haven, Conn., employs Ralph C. Pastore as an electrical engineer. . . Robert B. Reidy is in engineering sales at The Trane Co.'s E. Providence (R.I.) sales office.

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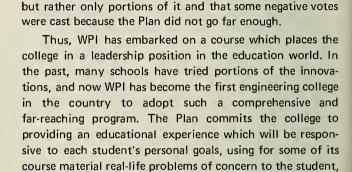
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THE JOURNAL

THE WPI PLAN A PERSONALIZED EDUCATIONAL PROGRAM



The WPI Plan, formerly called the Two Towers IV Plan, has been approved by the faculty and the trustees. The faculty approved the Plan by a vote of 92 to 46 with three abstentions. An interesting observation of those who voted negatively indicated that most did not oppose the total Plan

Major innovations in the WPI Plan call for up to 25% of the education to be involved with independent study and projects of a real nature, while 75% of the education will continue to be on a classroom-type basis. Traditional lectures will continue to carry a large portion of the teaching while individual and smaller group conferences will personalize the learning process.

all developed within an academic calendar which permits flexibility with respect to time span and learning pace.

In addition to being educated on the WPI campus, the Worcester Consortium for Higher Education and internship centers will play an important role in the education of each student. The Consortium, which is a joint venture by WPI with five other four-year colleges and four two-year colleges in the area, will provide opportunities for cross-registration by undergraduates, joint curriculum projects, cooperating libraries, a shared computer, and shared faculties.

A unique aspect of the WPI Plan is the establishment of internship centers of WPI at research laboratories, industrial plant locations, government centers, and social service organizations. The internship centers will make it possible to carry on projects which are best handled "on-site." They will usually consist of 15 students and resident faculty support. However, special studies or projects will be arranged, from time to time, for smaller groups at locations without a regular internship center. While the work will focus on real problems of the host organization, full educational direction will remain with WPI.

This third resource adds especially relevant experiences to be drawn on by the student and his advisor. Knowledge



is not limited to that which has been reduced to a textbook and then integrated into a "course" by the faculty. The student sees his field of interest in flux and growth, and in its multidisciplinary interrelationships. Here he can evaluate his educational objectives while he still has time to change.

The Plan adopts the concept of four seven-week terms, normally with three subject areas per term, in place of the now-existent two semesters with five or six courses per semester. This program of concentration on only three subjects at a time will, hopefully, provide a greater focus of attention and more efficient and effective learning. A fifth term of seven weeks during the summer will enable students to either accelerate their programs or to lighten their academic schedules during the year. The calendar, with its flexibility, will lend itself to easily meeting the needs of students with varying backgrounds.

In January of each year, an Intersession will bring together on campus visiting scholars, experts from industry and government, faculty and students, in a series of three week-long seminars.

Each seminar will be an intensive examination of a particular field of interest. This concentration will enable the faculty to keep abreast of developing technologies in their fields of specialization, and to be made aware of developments in other fields of ancillary interest. The visiting experts will both contribute to these seminars and advance their own knowledge by sharing views with other experts in the field. The student will undergo an intensive educational experience which will further his knowledge and provide him with a means of evaluating many different career opportunites.

Performance Evaluation

The WPI Plan adopts a grading and evaluation system based on self-motivation. A truly professional person achieves because of his inherent desire to promote an ideal he believes in or a project for which he is responsible. In preparing a student to enter the professional world, the faculty are his natural allies. An abstract numerical grading system tends to destroy this alliance and hinder the educational process in advancing the student's goals. For these reasons WPI has adopted a unique grading system based upon personal written evaluations by each faculty member. These evaluations include the grades of acceptable with distinction, acceptable, or not acceptable in all studies, plus a written evaluation of the student in all projects or independent studies. In the case of a project, an abstract of

the student's work will be included with the full report on file in the college's library. The sum total of these written evaluations helps the student in his personal development and allows him to show future colleagues his developing strengths.

Graduation Requirements

The Plan has adopted a graduation requirement which tests competence through the application of knowledge to unfamiliar problems. A comprehensive examination designed to require broad knowledge in a field of study, and two advanced level projects or independent studies drawn from real-life situations, are the mechanisms for testing that competence. These will not be narrow academic exercises, but rather seven-week projects or independent studies and one- or two-week comprehensives, with all sources of information available, just as will be the case after graduation.

Summary

The WPI Plan is the result of a thorough investigation of the demands of society on higher education. It assumes that a liberal education in the last quarter of the twentieth century must have a strong technical and scientific base and that the individual who is to be truly educated must examine thoroughly all of the implications of technology for human welfare.

The various modes of instruction, the individualized advising and curricular programs, the new academic calendar, the off-campus internship centers, the refreshing new approach to the evaluation of student work, and the joining of faculty and students in learning, are the outstanding features of the Plan.

With its innovations and positive attitude toward learning, the WPI Plan is an exciting and difficult undertaking for an independent college of engineering and science. The flexibility of the Plan accommodates the varying backgrounds, needs, and motivations of the entering students. While encouraging the undergraduate to be responsible and accountable for his own education, the college will provide him with excellent advising; a variety of contacts with expert faculty in both basic and specialized fields; modern library, laboratory, and other technical resources; an opportunity to study at off-campus sites; and above all, a community where both the student and the faculty member find about them a group of people enjoying learning and attempting to solve some of the most difficult problems of the time.

WIN PLACE AND SHOW?

The Propane Gasser, the Hybrid-Electric Vehicle, the Great Teakettle, the Clean Air Saab, and the Dark Horse Entry are ready for post time. The course has been set. The judges are ready. And the Clean Air Car Race is set to begin August 24. With some 40 low pollution automobiles entered by college students from campuses throughout North America, it promises to be not only an exciting race, but also a vivid means of demonstrating the effectiveness of low pollution automobiles in the fight against air pollution.

The response from students at WPI has been overwhelming. About 60 students responded to the initial announcement and five entries have been prepared. Much of the support for the program has come from American industry, with some financial support from a special alumni solicitation and from other donors. The only design requirement for the entries is that they must produce less pollution than that which will be required for vehicles in the state of California in 1975. The race has been organized by a committee of students from MIT, Caltech, and other schools.

There will be overnight stopping and repair facilities in Toronto, Ont.; Detroit, Mich.; Champaign, III.; Tulsa, Okla; Odessa, Tex.; and Tucson, Ariz. There will also be frequent substations along the route where electric entries will be able to recharge batteries and where cars using other types of non-conventional fuel (propane, compressed natural gas, etc.) will be able to replenish their supplies. All competing groups will be required to do their own driving and to make their own roadside repairs as necessary. Each entry will be accompanied by an observer or judge.

Beginning August 17, the week before the start of the race, the entries will be subjected to a series of detailed performance and emission tests in the Boston area. Based on these tests, points will be awarded and penalties will be assessed which will be used in determining the eventual

winners. The actual race will begin August 24 in Cambridge, Mass., and will proceed the 3,600 miles to Pasadena, Calif., along a predetermined route.

The cars will follow the Massachusetts Turnpike and the New York State Thruway to Buffalo, N.Y. From Buffalo, the cars will follow Interstate 290 and I-190 to Niagara Falls and cross over into Canada. They will follow the Queen Elizabeth Way to Toronto and then take Prov. 401 from Toronto until they cross back into the United States at Detroit.

From Detroit the cars will follow I-94 through Michigan to Michigan City, Ind., where they will pick up I-90 and then I-80 through Indiana to a point just south of Chicago, where they will pick up I-57 southward. In Effingham, III., the race will switch to I-70 and they will follow I-70 to St. Louis, Mo.

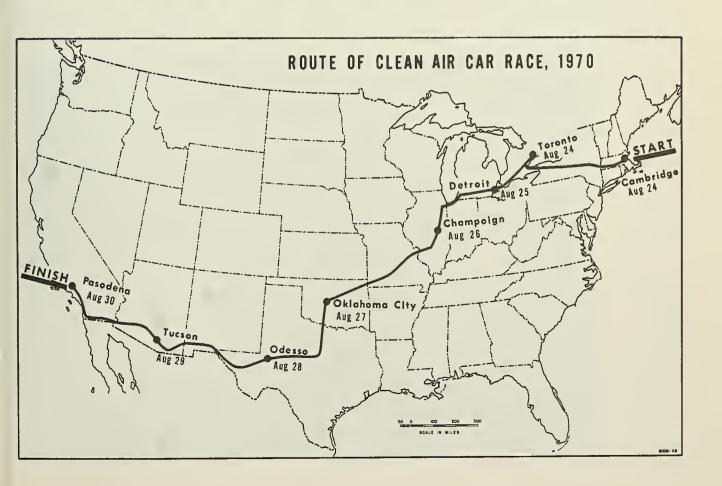
From St. Louis the route will take the cars along I-44 through Missouri and to Oklahoma City. In Oklahoma City the cars will pick up I-35 which will take them to Dallas, Tex. From Dallas the route turns westward again along I-20 and I-10 to Casa Grande, Ariz.

At Casa Grande the route will take the cars along I-8 to San Diego, where they will swing northward along I-5, taking them into the Los Angeles area. The final few miles will be along the Pasadena Freeway to Pasadena and the Caltech campus where post-race performance and emission tests will be conducted and the winner declared.

Along the race route Pit Crews have been organized by a Committee headed by Walter Dennen, '18, and Enfried Larson, '22. Pit Crew Chiefs are: John Geffken, '63, of Williamsville, N.Y. for Toronto; Ed Judd, '50, of Plymouth, Mich. for Detroit; Prof. Mohammad Amin in Champaign, III.; Bill Dorman, '48, of Tulsa for Oklahoma City; Arthur Dinsmoor, '49, of Midland for Odessa, Texas; Robert Johnson, '27, of Green Valley, Ariz. for Tucson; and Paul Yankauskas, '42, of Long Beach, Calif. for Pasadena.



A team works on the Clean Air Saab. At far left is Nancy Wood, '73, of Gardner, Mass., who will be one of the drivers of the entry.



Commencement Week 1970

ALUMNI MEETINGS

For some of the alumni the weekend began on Thursday afternoon with a Fund Board meeting. With Chairman Irving James Donahue, Jr., '44, of Shrewsbury, Mass. presiding, the first item of business was the election of a Chairman for the next year. Mr. Donahue was re-elected to a third term. Following this the selection of recommendations for membership on the Fund Board was made and Aram Kalenian, '33, was recommended for a second three-year term and Lawrence A. Penoncello, '66, was recommended for his first three-year term.

The progress of the 1969-70 Annual Fund was discussed and it was noted that contributions as of June 4 totaled \$114,101.42 from 2578 gifts with an additional \$12,269.88 from matching gifts.

A discussion of plans for the 1970-71 Annual Fund was next. Stephen J. Hebert, '66, Assistant Alumni Secretary, mentioned that under the administrative reorganization plans that methods of fund raising would probably face major revision. The key item would involve personal solicitation on a chapter-by-chapter basis. Final details of this were not available.

The Executive Committee met Friday morning. President Robert E. Higgs, '40, presided and opened the meeting by asking for a moment of silence in memory of Thomas L. Counihan, '24, who had passed away on June 2. In his President's message Mr. Higgs termed the past year as a year of much success and much progress. He said that the success was a culmination of many years' work by many people and he singled out for special praise the work of Bradley E.

Hosmer, '61, and his Administrative Reorganization Committee. In conclusion, he stated his belief that the Alumni Association is a dynamic part of the Institute and should play a vital role in its operation.

In other business, Mr. Donahue gave a report of the Fund Board, Olavi H. Halttunen, '45, outlined plans for the coming year and the budget was given Committee approval.

The Alumni Council met Friday afternoon following a luncheon in Morgan Hall with 16 chapters represented. The meeting was presided over by President Higgs who gave his President's report which he had previously given to the Executive Committee. He introduced Dr. George W. Hazzard who commented on the role of alumni and on the proposed budget of the college for 1970-71, which he noted would show a deficit.

The Nominating Committee, chaired by Stephen J. Spencer, '49, presented its report and in due process the following officers were elected:

President Robert E. Higgs, '40 Vice President Bradley E. Hosmer, '61 Secretary-Treasurer

Warren B. Zepp, '42

Executive Committee

Member-at-large

Carl W. Backstrom, '30

Member-at-large

Leonard Polizzotto, '70

Fund Board Member

Aram Kalenian, '33

Fund Board Member

Lawrence A. Penoncello, '66

No action was necessary on the continuing terms of Ralph R. Gabarro, '51, Vice President and Plummer Wiley, '35 and Francis S. Harvey, '37, Executive Committee Members-atlarge,

In the most important single action of the day, the Council gave unanimous approval to the recommendations for administrative reorganization after making only a few minor changes. (An article on the reorganization appears elsewhere in this issue).

REUNION DAY

With the weatherman uncooperative for the first time in recent years, Reunion Day began with breakfast for those who had had rooms in Daniels Hall Friday night. The rain, however, which forced the festivities inside into Morgan Hall, never dampened the spirits of the large turnout.

Registration was held in the lobby of Morgan Hall during the morning. During coffee, the 50-Year Associates met in Daniels Hall and elected one of the newest members, Malcolm B. Arthur, '20, as their president. Being president of a group is nothing new for Malcolm as he is also president of his class. Class pictures were taken prior to the luncheon and the classes of 1935 and 1920 both had over 60 people in their pictures. After the pictures, over 350 people gathered in the Morgan Hall dining room for a fine meal prepared by the Morgan Hall kitchen staff headed by Al Begin.

The invocation was given by Winthrop G. Hall, '02, and the luncheon was served. Following the luncheon, Robert E. Higgs, '40, who had been re-elected president of the Alumni Association the previous day, introduced the guests seated at the head table, including WPI President, Dr. George W. Hazzard.

In his first address at a Reunion Day luncheon, Dr. Hazzard noted his pleasure at the large turnout of alumni for the festivities as well as the excel-

lent receptions he and Mrs. Hazzard had received in their travels during the past year to most of the alumni chapters. He also commended several of the older alumni in attendance for their dedication and interest and he commended other alumni, namely, Leslie J. Chaffee, '16, John T. Hegeman, '45, and Robert E. Scott, '45, for traveling, respectively, from Tacoma, Washington, Cranbrook, British Columbia and London, England to attend the Reunion. In conclusion, he invited everyone to stop in at his office in the southeast corner of Boynton Hall whenever they are in the area.

The annual Alumni Meeting was then held. Robert Higgs, '40, President, presided. In his opening remarks he explained what a busy year it had been and said that the accomplishments of the year were the results of work which had been going on for many years and that his administration was not solely responsible. He thanked all those who had helped during his first year, and in particular singled out for praise, Bradley E. Hosmer, '61,

Chairman, and the other members of the Administrative Reorganization Committee. He then introduced Brad to explain the recommendations of his committee. Following his explanation, Aram Kalenian, '33, made a motion to change the wording of the recommendation, but on a voice vote this was defeated. The total program of recommendations was voted on next and was passed. With no further business, the meeting was adjourned and the presentation of awards followed.

First of the presentations was the fifty-year diplomas. These were presented by President Hazzard and Dean Martin C. Van de Visse to 34 members of the Class of 1920.

Dr. William E. Hanson, 32, Chairman of the Board of Trustees, presented Robert H. Goddard Awards for Professional Achievement to Walter L. Abel, '39 and Anson C. Fyler, '45. Mr. Abel is vice-president for corporate systems and director of research for the USM Corp. of Beverly, Mass. Mr. Fyler is president of Arrow-Hart, Inc.

of Hartford, Conn.

The Herbert F. Taylor Award for Distinguished Service to the Institute was presented to Chandler W. Jones, '26, by Alumni President Higgs.

The "special" reunion class messages were the next item on the program. Representing the Class of 1920 was their president, Malcolm B. Arthur, who presented a check for over \$10,000 to the Institute as their class gift. The Class of 1945 was represented by Robert E. Scott. Noting that their class could not match the gift from the Class of 1920, he nevertheless did present a gift to WPI which was in excess of \$3,000. The president of the graduating class, Leonard Polizzotto, represented his class and recalled some of the highlights of the class' four years at WPI.

The Class of 1917 Attendance Cup was presented to the Class of 1920 for the best attendance at the reunion on a percentage basis. They had 35 of the 69 living members of their class in attendance.



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Photo courtesy of Worcester Telegram & Gazette.

40 seniors received their commissions at ceremonies in Alden.



Ed Delano, '30, receives a trophy from Warren Zepp, '42 at the reunion luncheon for riding a bicycle from California to Worcester.

A special award was then presented by Prof. Zepp. It was a trophy with a bicycle rider on it and it was presented to Edward R. Delano, '30. An article on Mr. Delano, who rode a bicycle from California to Worcester, appears elsewhere in this issue. In accepting the award, Mr. Delano commented, "A lot of people in the West and Midwest, who had never heard of Worcester Tech, have heard of it now."

The final two items on the program were the singing of the Alma Mater, capably led by Lenny Polizzotto and the Benediction, which was given by Mr. Hall, '02.

But Reunion Day was not over for many. Many attended the ROTC commissioning ceremonies which were held in Alden Memorial. The Commanding General of the U.S. Army's Signal Center and Signal School at Fort Monmouth, N.J., Brigadier General Richard C. Horne, III presented commissions to 40 members of the graduating class. Others were to attend class get-togethers. One class, the Class of 1945, met at the Sheraton Yankee Drummer Inn in Auburn for their 25th reunion party and 36 members of their class were in attendance.

And thus Reunion Day, 1970, drew to a close for the alumni. Many were to remain, however, for Baccalaureate and Commencement. But for those who were leaving, it had been a successful weekend. Seeing old friends, recalling fond memories, making plans for their next reunion had all been a part of it.

But for the graduating seniors Commencement Weekend was just beginning. On Saturday night many members of the class returned for the annual dinner dance. It was held at the Yankee Drummer Inn and was all a part of the build-up to Commencement Day which 265 seniors had only dreamed about four — and for some, five — years ago.

COMMENCEMENT DAY

The day began with the traditional Baccalaureate Service in Alden Memorial Hall at 10:00 A.M. The sermon

this year was delivered by Rev. Dr. Wallace W. Robbins of the First Unitarian Church of Worcester.

The long-awaited graduation hour approached on Sunday afternoon as those receiving degrees gathered in front of Boynton Hall to form the processional. A small percentage were wearing armbands in protest but they were only a very small number out of the total of 265 candidates. Led by Honorary Marshal, Prof. John P. van Alstyne, WPI's Outstanding Teacher of the Year, and by the Marshal, Dean Richard F. Morton, the processional proceeded across Earle Bridge and the Quadrangle into Harrington Auditorium, followed by the faculty, administration, and trustees.

The invocation was given by the Rev. Peter J. Scanlon, Catholic chaplain at WPI. The National Anthem followed before President George W. Hazzard introduced Dr. Thomas O. Paine, Administrator of the National Aeronautics and Space Administration, who delivered the principal address.

He announced for the first time that the United States is negotiating with European countries on a plan to launch and operate an orbiting scientific laboratory by 1980. He said "I have just returned yesterday (June 6) from a week in Europe negotiating with other nations to work with us" in launching such a laboratory. If these efforts come to fruition, he said, and "if America maintains its momentum in space, it will be possible for young professors and their graduate students to routinely travel back and forth to do research in an international orbiting laboratory before the end of the decade of the seventies." He did not elaborate on his negotiations or his proposal for an orbiting laboratory.

He spent much of his time comparing what he called Squareland and Potland. Excerpts from the remainder of his address follow:

"It's a great pleasure to be with you here today, for I have a personal previous association with this great school. During World War II a WPI graduate who was a close friend and shipmate, Ben Phelps, and I spent many lonely hours at night on the bridge of a submarine in the Southwest Pacific discussing the problems of the world, and what we would do after the war to improve things. Unfortunately, I am the only one of the pair who was able to undertake this. So I feel a special responsibility here today, and would like to dedicate my rather offbeat remarks to Ben Phelps of the Class of '41.

Ben always had a mischievous twinkle in his eye. He had a tremendous sense of humor, although technically, he was extremely sharp. I think Ben's advice to me in speaking to you would be 'For goodness sakes, don't be pompous. Don't talk platitudes. Say what's on your mind, and get a little humor into it.'

Let me therefore address myself to what I believe to be one of the most fascinating actions in the world today: the clash between two contemporary social worlds, which for the sake of discussion we can call the war between 'Potland' and 'Squareland'.

One antagonist is the world of Squareland — the world you were born and raised in - the world your parents live in. The other, the world of Potland, is not so easy to describe because it is shadowy and shifting and partly underground. Actually, each of these lands is simply a state of mind, a world view. Everyone knows the established leaders of Squareland's government, universities, corporations churches. They are about as lively as their name implies: the pillars of society. By its very nature, Potland is much harder to describe, but for purpose of illumination I'd like you to imagine that Potland has the same establishment structure as Squareland, and nominate appropriate leaders to help characterize this evanescent new world.

The Supreme Court of Potland would obviously consist not of 'nine old men' but of seven swinging young

men — the Chicago Seven. They know how to carry out a judicial hearing. Potland's Secretary of Agriculture — who'd radically change crop planting — would be Dr. Timothy Leary. Then Secretary of the Interior Jane Fonda's chief concern would not be making the Indians comfy on Alcatraz, but printing enough 'Keep off the Grass' signs — and you know what Smokey the Bear would be smoking.

This hypothetical leadership list provides a short and albeit exaggerated description of Potland. Potland should not be regarded as a silly subculture, or a run-down hippie movement, but as a full-fledged nation operating in the midst of Squareland.

What provocations have driven Potland into shrill battle with Squareland? Fears of cultural domination by Squareland, of economic reprisal, even of genocide are mentioned. Potlanders regard the triumphs of Squareland from its unprecedented economic achievement to landing on the moon as arrogant assaults on its soul and psyche, Intolerance and bigotry exist on both sides. Disaffection on the home front in Potland has led to the classical response by its leaders. Perhaps the excitement of living by plunder rather than the hard discipline of constructive work plays a part. Since Potland's economy is largely based on foreign aid from Squareland, some guilt and animosity toward the donor are probably inevitable.

But in my view, all these explanations are simplistic, and overlook the most unforgivable and insulting provocation of all on the part of Squareland. This provocation is now operating against young Potlanders in all industrialized nations that have achieved unprecedented productivity wealth. For Squareland today is ignoring its young people's dreams and aspirations and abilities. Squareland is clearly failing to provide a clear challenge and opportunity to its young men and women to aspire to great human achievement in their vigorous youth. This is indeed unforgivable neglect and boredom are the ultimate

insult, the worst provocation, and ennui breeds revolution. Squareland must rectify this, or its young will emigrate to Potland and peace will be hard to restore.

Up to now the principal impact of the space program has been on Squareland. The Aerospace business has become America's largest manufacturing industry. It and the computer industry pay the world's highest wages, while earning America's greatest trade dollars overseas. Few Americans realize that the Aerospace industry accounted for 200% of the nation's favorable balance of payments for the past two years. Space age developments have ushered in many dramatic advances from low cost jet transportation to global satellite communication and weather observation systems. The social effects are many; for example. low cost jet transport has led to 'Se habla espagnol' signs all over New York City. Yet the greatest social impact is still to come; the space age has just begun. The new horizons that have already been opened in science and technology, however, provide Squarelanders with increasing technological power and intellectual satisfaction. Space developments will soon give man the capability to intelligently monitor and manage this planet's entire biosphere, better utilizing the earth's resources in the best interest of all mankind. Beyond this lies the more distant but inevitable day when man will establish new colonies on other worlds, extending the domain of terrestrial life, and initiating entirely new human cultures.

Although Potlanders value some of the promises of space progress, such as increasing international contacts, cleaning up the biosphere, drastic reductions in transportation and communication costs, and increased leisure time, they find little satisfaction in the space program today. It is just too square — too disciplined — too rational for them. But in the long run space advances will have a major impact on the Potlanders. As we press forward with the exploration and utilization of

space, we will open many challenging new opportunities for young men and women in their vigorous youth. As previously discussed, this is of supreme importance in settling the war, I cannot say that our present cutback and austere NASA program is providing enough opportunities today for young men and women. Many young people have already benefited, though, and an expanded space effort could do much more. How could 1 be satisfied with our present status, when there is an excellent chance that soon I will be sending the first grandfather to land on the moon? Just think - an astronaut grandfather? He deserves to go but so do some of you graduating today, and you could and should be doing so. Some of you will go, and long before you're grandfathers, too, if America maintains its momentum in space and we build the space stations and rocket plane shuttles in the 1970's that we now plan.

How will the war (between Squareland and Potland) end? Since the Squarelanders are in general of the older generation, it is clear that the younger Potlanders have an ultimate weapon — the biological time bomb. You will win out as the older generation eventually retires. But what a hollow victory it will be! Suddenly a new generation will appear in the universities whom the Class of 1970 cannot understand.

But now, for the first time in history, there is a new force that can act in your favor. The space age is really moving. It partly originated right here on this campus with Robert Goddard. And it will indeed open swinging and challenging opportunities at an unprecedented rate to captivate bright and searching young minds. It can give them fascinating pioneering jobs worthy of their mettle. This is true both in space and in many other fields. The message we have brought back from the moon is that America can accomplish whatever it resolves to do. Apollo must embolden us to tackle our other problems with equal confidence and energy.

But don't ever try to completely eliminate the Squareland-Potland war from the human scene. You can't, and anyway, this continuing uproar is the essence of our richly diversified human scene in the reasonably United States of America."

Four honorary degrees were conferred by Dr. William E. Hanson, '32, Chairman of the Board of Trustees. Recipients of Honorary Doctor of Engineering degrees were Dr. Paine, the Commencement speaker and Dr. Elmer W. Engstrom, Chairman of the Executive Committee of the Board of Radio Corporation of America, Dr. Elizabeth A. Wood, a specialist in crystals at Bell Laboratories, and Dr. Russell E. Train, Chairman of the Nixon Administration's Council of Environmental Quality received Honorary Doctor of Science degrees, Following the Honorary degrees, Dr. Hanson presented certificates to the School of Industrial Management.

President Hazzard, with the heads of the degree-granting departments, next presented Bachelor of Science degrees to 265 undergraduates and Master of Science degrees to 50 candidates. The highest academic degree, Doctor of Philosophy, was awarded to nine candidates.

Next on the program was President Hazzard's first message to a graduating class. He said:

"It has been traditional at WPI for the President to make a few parting and exhorting remarks to the seniors. Today, for the first time, I shall try my hand at it but I wish to enlarge the group of addressees to include parents. For together we at WPI and your parents at home have helped you seniors become the educated people you are at this moment. Together, we as parents and as a college have tried our best to fulfill our responsibilities, to offer the opportunities for education and the students to make full utilization of these opportunities. And now what?

I offer you two responsibilities with the fervent hope that you are successful in happily combining them.

These two are the responsibility for full professional use of your education in serving society and the responsibility of being fully a citizen in a democratic but complicated country. In both cases I hope the high ethical standards of engineers and scientists will apply.

In this particular instant of history it requires a steady hand and head to combine these two responsibilities effectively and constructively. You have done so here as students, a fact of which all of us are proud. Now I specially ask you and your parents not to lose sight of that second responsibility of being a fully participative citizen. How our country's leaders, executive and congressional, proceed will depend in great measure on the thoughtful input from each of you. Your efforts in written expression, in support of your political candidates, in conversation with friends and acquaintances will provide the weight of evidence leading to action - to ending

the war in Southeast Asia, to ending racial discrimination at home, to grappling honestly with environmental problems to a rational balance between space and earth, to a livable world.

In the tradition of the university and a democratic society, respecting the rights of each person, all of us must exercise our best efforts as scientist and citizen in cooperative efforts toward achieving a future of which we can be proud. A challenging goal, ladies and gentlemen, for the graduates of WPI."

Upon completion of the President's message, Rev. Scanlon offered the Benediction. Another group of talented individuals, the 102nd of its kind, had joined the ranks of alumni, and as the sun appeared for the first time during the long weekend the traditional reception and picturetaking began on the quadrangle as another successful Commencement ended.



Harrington Auditorium on Commencement Day.





A happy graduate with an engineer's cap following graduation.



Anson C. Fyler, '45, receives Robert H. Goddard Award from Dr. William E. Hanson, '32, Chairman of the Board of Trustees.



Chandler W. Jones, '26, receives Herbert F. Taylor Award from Alumni President, Robert E. Higgs, '40.



Walter L. Abel, '39, receives Robert H. Goddard Award From Dr. William E. Hanson, '32, Chairman of the Board of Trustees.



Honorary
degree recipients
in 1970 are pictured
with President Hazzard.
From left,
Elmer W. Engstrom,
Elizabeth A. Wood,
Dr. Hazzard,
Thomas O. Paine,
and Russell E. Train.



Robert C. Gosling, '68, receives his MS degree in civil engineering from Dr. Hazzard.



"Me in 1990, Daddy?"

ED DELANO, '30:

CALIFORNIA TRAVELER

It's not often that any college or university gets much publicity from any of its reunion-connected activities. In fact, it's seldom that reunion activities receive *any* public notice. Furthermore, very few people from anywhere are physically capable of performing such a feat.

Returning to his alma mater for the first time in forty years, Edward R. Delano, '30, not only did it the hard way but he did it the long way. Taking five weeks plus one-half of a day to cover the 3,150 miles from his home in Red Bluff, Calif. to Worcester, Ed rode a bicycle all the way! And in his travels he not only received much publicity — and raised eyebrows — for himself, but also a large amount of publicity for his college.

A grandfather seventeen times and in exceptional physical condition for a man of 65 years, Ed graduated from WPI in 1930 with a BS degree in civil engineering. He retired from the State of California's Division of Highways during the winter of 1970 after 37 years' service. At the time of his retirement he was superintendent of highway maintenance.

An experienced cyclist, Mr. Delano is a member of the Northern California Cycling Association. He rode while attending WPI, but he did not resume the sport until 1963 when he joined Amateur Bicycle League of the America with his son. He is the California state champion, having won the title three consecutive years. The title is based on time trial events and participants receive a handicap based on age. Last summer, as a prelim to his cross-country trip, he made a trip from California to Missouri, averaging about 100 miles a day.

With an enthusiasm typical of a much younger person, Ed recounted some of the highlights of his trip after he arrived in Worcester. He told stories of riding in good weather and in bad weather; in sunshine and in snow; of keeping a look-out for dogs, and sometimes having to outrun them; of having to walk his bicycle up only two hills during the entire trip (both in the state of New York); of being ready to "hit the road" at dawn every morning; and of meeting a countless number of people along the way, many of whom

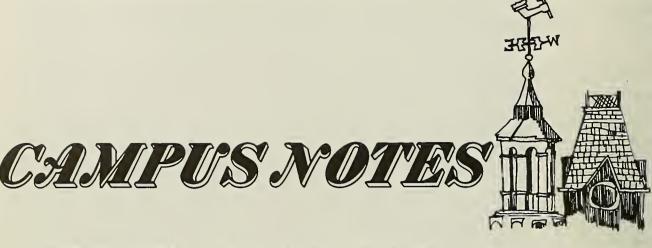
offered him assistance.

On Sunday, June 7, Ed Delano boarded a plane in Boston for the return trip to California. With him, neatly packed, was his Italian-built bicycle that weighs only 26 pounds, has 15 speeds, and costs over \$300. And thus Ed Delano returned home, having added another outstanding accomplishment to his career — and ready to plan his next trip.



Ed Delano, '30, is greeted by Warren Zepp, '42, and Carl Backstrom, '30, along with some of the brothers of Phi Gamma Delta.

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VAN DE VISSE ACCEPTS NEW POSITION

Dean Martin C. Van de Visse has accepted a position as Dean of Students at Hiram College in Hiram, Ohio, effective in July, 1970. He has been Dean of Student Affairs at WPI since 1964.

Hiram College is a co-educational, liberal arts college with an enrollment of 1,100 undergraduates. In his new position, Dean Van de Visse will be responsible for all student activities, a counseling program, and the residence halls, and will have some involvement with their admissions program. He will have two assistant deans on his staff, plus a residence hall director, campus center director, and four psychologists. He will also be an instructor of one course each semester.

ADMISSIONS OFFICE CHANGES Elliott Leaves

William F. Elliott, '66, Assistant Director of Admissions at WPI since 1966, has left WPI to accept a position as Associate Director of Admissions at Carnegie Mellon University in Pittsburgh, Pa.

A graduate of WPI in 1966 with a BS degree in mechanical engineering, he received a master's degree in guidance and counseling from Clark University in June, 1970. He plans to begin a program leading to a doctorate degree at the University of Pittsburgh.

In his new position he will be the

primary admissions man for the Carnegie Institute of Technology School of the University.

Kievit Joins Staff

Donald J. Kievit, Jr., has joined the Admissions Office staff as Assistant Director of Admissions.

A graduate of West Point Academy in 1964, he has been a member of the Armed Forces since then. He has served in Vietnam, attended Airborne and Ranger Schools, and since 1968 has been a member of the Military Science Dept. at WPI. At the time of his retirement he held the rank of Captain.

Estabrook Heads A.S.S.O.

E. Penn Estabrook, Assistant Director of Admissions, has been named to coordinate the Alumni Secondary School Organization. This program, which was formerly coordinated by Bill Elliott, is designed to involve alumni in the promotion of WPI among high school students. About 250 alumni are presently involved in thirteen regions which extend southward to Washington, D.C., and westward to Chicago, III.

Estabrook, who joined the WPI staff in August, 1969, after serving in the Army for three years, is a 1966 graduate of Clark University.

YEARBOOK DEDICATED

The 1970 edition of *The Peddler* has been dedicated to Prof. Kenneth

E. Scott, '48. A member of the Mechanical Engineering Dept., he has been at WPI since he graduated from WPI in 1948. He received an MS degree from WPI in 1954.

The dedication read: "Occasionally a faculty member lifts himself above everyday routine. He becomes involved with the student beyond the standard mechanics of the classroom. His main concern becomes that of the student's overall welfare with a deep concern for his future. It is such a teacher to whom we dedicate the 1970 PEDDLER... Professor Kenneth E. Scott."

TECHNIQUEST

The 32nd Annual Techniquest program was held on the campus from June 21 through June 27. Seventy-five high school students were in attendance, including one female, and they represented 14 states, plus Puerto Rico, and included one student from Arizona. The academic portion, designed to aid a high school student in his selection of a field of study in college, was coordinated by Dr. Raymond R. Hagglund, '56, and was based for the first time on the project approach to learning. From all reports, it was extremely well received. The program was coordinated by Dean William F. Trask.

CLASS OF 1974

In a year when several private colleges fell short of their projected class size for incoming freshmen, WPI has met its goal. Next year's freshman class will total about 545 students. Included in this total will be 24 coeds, bringing the number of coeds on campus in the fall to a total of 47. There will be nine black students in the class, including three girls.

The geographical distribution will include representatives from 29 states and seven foreign countries, and there will be 27 sons of alumni, 22 grandsons of alumni, and one granddaughter of an alumnus.

UNDEFEATED FOOTBALL TEAMS

The Poly Club and Athletic Dept. have planned a reunion for October 9 and 10 for the only two undefeated football teams in the history of the college. Invited to return to WPI for the special festivities will be the undefeated teams of 1938 and 1954, who had identical 6-0 records. Plans include a social hour and dinner party on Friday evening, October 9, and a football game on Saturday, October 10.

"I am hopeful that all the living members of these two great teams will be able to return the weekend of October 9 and 10," said Athletic Director Bob Pritchard. "It should be a fun weekend for everyone, renewing old friendships and recalling the great plays that almost made some squad members All-Americans. It should be a great time."

The 1938 team was lead by Captain Carl Lewin, '39, and the 1954 team was led by Co-captains Pete Horstmann, '55, and Ed Bouvier, '55.

NEW DORM IN PLANNING STAGE

With the need for additional undergraduate housing a constant problem, WPI has undertaken initial steps to find a solution. A committee of undergraduates and faculty members have been studying during recent

months the needs and desires of students regarding residence facilities. Based on the studies, preliminary plans have been drawn up and recently preliminary application was made by the college to the Federal Housing and Urban Development Dept. (HUD) for funds to undertake such a project.

WICH ON AIR

The college FM radio station, WICN, has continued to be on the air during the summer vacation months. The station, broadcasting at 90.5 on the FM dial, is jointly operated and managed by students from WPI and Holy Cross with transmitting facilities in Alden Memorial.

The station has operated during the summer months on a limited basis. In the fall they intend to expand their programming, which is basically educational, to include more classical music and possibly football game coverage. The station, which can be received throughout Worcester County and beyond, can broadcast stereo programs, and they welcome comments from alumni and listeners.

DEAN OF STUDENT AFFAIRS NAMED

Donald P. Reutlinger, 38, of New Salem, Mass., has been appointed dean of student affairs. He had been dean of students at the Rhode Island School of Design and earlier taught at the University of Massachusetts where he was active in student affairs.

Dean Reutlinger was graduated cum laude from Princeton University in 1954 with a major in English. He studied at the University of Paris and in 1964 received his master of arts degree in English at Harvard.

A year ago, he was a consultant in curriculum revision at the Swain School of Design, New Bedford, where he delivered the commencement address in 1969. At the University of Massachusetts, he was an instructor in English from 1965 to 1967, serving also as research consultant, University Study of Student Culture, with the

We welcome
your comments
and ideas
concerning the
publication
of the Journal.

Dean of Students Office. While at Harvard, from 1958 to 1965, he was a teaching fellow and teaching assistant in General Education, counselor in the Bureau of Study Counsel, and for three years, assistant dean of freshmen.

He is married and has a six-year-old daughter.



Dean Reutlinger

REORGANIZATION APPROVED

The administrative reorganization of the Alumni Association, which has been discussed, debated, and drafted during recent months, primarily by a committee headed by Bradley E. Hosmer, '61, was given unanimous approval by the Alumni Council on June 5, 1970 and by the Alumni Association at its Annual Meeting on June 6, 1970. The reorganization move had been strongly backed by the college administration, headed by President George W. Hazzard and Vice President — University Relations, Olavi H. Halttunen, '45.

The reorganization vote approved the Plan subject to final revisions of the Constitution and By-Laws. From the preamble to the Recommendations, the reorganization is "to obtain a more closely knit but independent Alumni Organization to work in full harmony with the (College) Administration for the betterment of WPI". In the past the Alumni Association has been a separate organization and while all of its activities have been for the College, it has not actually been a part of the College. Now it becomes actively integrated into the College structure with common goals and budgetary planning.

Some of the key points to the reorganization are:

The Alumni Secretary, Warren B. Zepp, '42 will report to WPI's Vice President — University Relations, Olavi H. Halttunen, '45 for administrative purposes. The Alumni Secretary will continue to be elected by the Alumni Council, but now the selection will be based on the recommendations of both the Alumni and the College. Four meetings of the Alumni Executive Committee and members of WPI's staff have been scheduled annually for the discussion of "matters of mutual concern."

Annual alumni fund raising is now the responsibility of

the WPI Development office. The Alumni Fund Board will continue to share the responsibility for the over-all methods of individual solicitation. In line with this, all fund raising records are being consolidated into one office to facilitate operations and the College will now bear the expense of developing and maintaining the record system.

Beginning with the Fall, 1970 edition of the Journal, a full-time publications specialist will write and edit the magazine. The Alumni Secretary, however, will maintain editorial control over each issue. Thus the Alumni Office will now be relieved of the task of preparing the copy for each issue.

The Association will form working committees to meet with members of the WPI community to work on programs of mutual interest. Possible committee assignments exist in the areas of student recruiting, undergraduate affairs, athletics, library development, corporate relations, placement, trustee selection, publications and curriculum development.

The last item of the approved recommendations states, "Should a conflict between these recommendations and the current By-Laws and Constitution exist, the recommendations will take precedence for a period not to exceed one year from the date of adoption of this amendment, by which time the necessary By-Laws and Constitution changes, to remove conflicts, will be presented for possible Alumni Association approval."

The recommendations as approved are simply a means to an end. They are designed to promote better working relations between and amongst the College and its alumni. With this reorganization the Alumni will be better able to help the College meet its educational objectives.

"MISSING" ALUMNI -CAN YOU HELP?

The records of the Alumni Association are incomplete for the individuals listed at right, and in particular, we have no mailing addresses for them. If you have any information about these people, or know how information may be obtained, kindly contact the Alumni Office, Woreester Polytechnic Institute, Woreester, Mass. 01609.

Frederic H. Leland	1895	Richard L. Goodwin	1934	Thomas M. McCaw	1946D	William A. Rabinovitch	1958
Edward L. Cullen	1896	William A. Micbalek Raymond G. Desrochers	1934 1935	Jose R. Biamon August L. Flotteron, Jr.	1947 1947	Frank A. Seidel John A. Beede	1958
Charles V. Walter	1896	Alvaro A. Silva	1935	Roland H. Guay	1947	Clifford H. Daw, Jr.	1959 1959
Edward G. Beckwith Roy G. Lewis	1897 1900	Louis D. Soloway	1935	Ernest E. Kimball	1947	Robert W. Milik, Jr.	1959
Harry W. F. Dunklee	1901	Russell H. Wood	1935	William Longmuir	1947	George J. Nelson	1959
Winfred M. Adams	1902	William F. Atwood, Jr.	1936	Vaikunth C. Thakar	1947	Henry W. Brandt	1960
Chester A. Bacon	1903	Joseph R. Hastings	1936	Benjamin B. Barker, Jr.	1948	Arthur D. Brook	1960
Herbert W. Tufts	1903	Thomas J. Healey, Jr.	1936	David I. Caplan	1948	John S. O'Connell, Jr.	1960
Elipidio De L. Wernek	1903	William Miseveth	1936	Charles A. Heyelman	1948	Gungor Dagistanli Kenneth Roberts	1960 1960
! Manuel G. Rosado (Clarence G. Derick	1905 1906	John H. Wyman John H. Chapman	1936 1937	Julian H. Jacobs	1948	Peter H. Schneider	1960
Ralph S. Forsstedt	1906	Frank Ellsworth	1937	Birger D. Lund, Jr. William T. Nurney	1948 1948	Maung T. Swe	1960
Walter P. Ingham	1906	Arthur A. Davis	1938	William R. Olha	1948	Derin K. Turkomer	1960
George G. Whitney	1907	Samuel A. A. Aaron	1939	Shou L. Pan	1948	Harold W. Berk	1961
Elliott A. Allen	1908	E. Bruce Crabtree	1939	Leonard D. Rood	1948	Kayhan Boro	1961
James G. Goodell	1910	Irving W. Forde	1939	Kinsley A. Ball, Jr.	1949	Terry W. Donovan Suat Gonen	1961
Alvan L. Grout	1910	Laurence M. Howarth Raymond B. Piper	1939 1939	Russell P. Bradlaw	1949	James Kacbadorian	1961 1961
Stephen M. Poutier James F. Thompson	1910 1910	Charles S. Stevens	1939	Edward Foley Elmer R. Griffith, Jr.	1949 1949	John W. Kappel	1961
Ralph H. Bowers	1911	Howard L. Anderson	1940	Frederick S. Jenkins, Jr.	1949	Maung T. Maung	1961
Arvid I. Peterson	1911	Lennart Brune	1940	Tsu-Yen Mei	1949	Dr. Timothy C. Meyers,	
William I. Randall	1911	Bernard Polonsky	1940	William H. B. Parr	1949	Svend E. Pelcb	1961
Royal B. Libby	1912	Judson D. Lowd	1940	Harry J. Rogers	1949	Gordon B. Phillips	S1M1961
Robert W. Mungall	1912	Harry E. Stirling	1940	Vernon H. Russell	1949	Husein Y. Pothiawala	1961
Stanley M. Gunn	1913	Alfred F. Andersen Burgess P. Brownson	1941	John A. Snyder	1949	Donald E. Schaaf	1961
Cbarles O. Snow Edward H. Vance	1913 1913	Graham T. Douglass	$1941 \\ 1941$	Philip L. Barbaccia Fred A. Carmody	1950 1950	Donald W. Wilmot Maung N. Win	1961 1961
Harry D. Stephens	1914	Milton B. Lemeshka	1941	William G. Collings	1950	Haines J. Boyle	1962
Artbur L. Tburston	1914	Jerome E. Schread	1941	Frank J. Demarco, Jr.	1950	Mebmet I. Can	1962
Leon W. Dunbar	1916	George F. Taylor	1941	Morey L. Hodgman	1950	Louis C. S. Fernandes	1962
Thomas W. Farnsworth	1916	Chamron Tishyanandana	1941	John M. Percival	1950	Stuart C. Gillow	1962
Gilbert M. Ireland	1916	George C. Andreopoulos	1942	George M. Cooley	1951	Jay P. Hochstaine	1962
Joaquim De R. Junqueira Raymond H. Page	1916 1916	Frederick J. Bargiel Morris C. Cbu	$1942 \\ 1942$	Ellsworth R. Cramer Leon Hoogasian	1951 1951	R. Michael Leistritz Robert G. McDonald	$1962 \\ 1962$
Herbert C. Kelly	1917	David L. Hartwell	1942	Mebmet R. Ozbas	1951	William H. C. Reinert	1962
Walter I. Stearns	1917	Kenneth T. Hunt	1942	Ratansbaw K. Patel	1951	Basat H. Tilkicioglu	1962
Edward L. Anton	1918	Kelvin H. Kiely	1942	Mustafa T. Sonmez	1951	Paul Y. Chan	1963
Frank J. Murpby	1918	William S. Allan, Jr.	1943	Bernard G. Ziobrowski	1951	Leslie J. Hart	1963
Robert H. Taylor	1918	Everett W. Dunlap	1943	Jack Y. T. Kwan	1952	Herbert W. Head	1963
Conant L. Starr	1919	Harold E. O'Malley	1943	Robert R. Nuttall Lysle P. Parlett	$1952 \\ 1952$	William P. Morrison Pundalik U. Prabhu	1963 1963
Walter Smitb Harold S. Woodward	$1920 \\ 1920$	Marsball B. Raybin Dr. George P. Scott	1943 1943	Bernard J. Petrillo	1952	Gordon O. Stearns	1963
George A. Bijur	1921	Louis J. Baldini	1944	Karl H. Bissell, Jr.	1953	Stanley J. Andrysiak	1964
Forest M. Douglass, Jr.	1921	Harold A. Krieger	1944	Martin R. Cohen	1953	Krishnakumar V. Chaudi	
Milton W. Graff	1921	Robert H. Maass	1944	Ernest E. Demar	1953	John Gowen	1964
Cbarles A. Morse	1921	Peter E. Talley	1944	Hugh R. McLoughlin	1953	Paul A. Vajcovec	1964
Joseph F. Scanlan	1921	Donald M. Campbell	1945	Nasuh M. Malas	1953	Sunil M. Mebta	1965
Joseph T. Fanning	1922	Clifford E. Lanigan Robert W. Lewis	$1945 \\ 1945$	David C. Morrison Harold G. Rackett	1953 1953	George W. Mitschang Arthur A. Padovano	1965 1965
Francis W. Harney Cbarles E. Martin	$1922 \\ 1922$	Leonard F. Moore	1945	Philip R. Randall	1953	Venkatesb B. N. Rao	1965
Harold H. Judson	1923	Harry W. Sandberg	1945	Dr. Wu Mei Yao	1953	Ali H. Ustay	1965
Richard F. Whitcomb	1924	James Taylor, III	1945	Paul G. Granfors	1954	Satisb H. Bbatt	1966
Tzu-Hzu Cbou	1925	Alvi T. Twing, Jr.	1945	Framrose M. Karani	1954	Roberto Huyke-Luigi	1966
Cbarles E. Crang	1925	Philip S. Adams	1946	James F. King	1954	Ahmet G. Kozanoglu	1966
John J. Hynes	1925	Gaetano Biuso	1946	Haralambos N. Kritikos	1954	William S. Pete Charles C. Roberts, Jr.	1966 1966
Cbarles F. Stevens Carl H. Nordstrom	1925	Jobn M. Considine Wilton A. Ericson	$1946 \\ 1946$	Jack K. Mackowiak Malcolm G. McLeod	1954 1954	Robert J. Cornell	1967
Bradford M. Bowker	$1926 \\ 1927$	Robert S. Gamble	1946	Harold Lake	1954	Mahendra K. Dave	1967
George C. Cbow	1927	Dr. Karl M. Mayer	1946	James E. Clampett	1955	Ricbard C. Graham	1967
Yat W. Cbow	1927	Cecil A. McCurry	1946	Markar A. D. Markarian	1955	Mohmedjarid M. Malek	1967
Gordon N. McColley	1928	Alvin M. Ross	1946	Robert D. Morgan	1955	David R. Malley	1967
Leo J. Melican	1928	Edward Stokel	1946	Martin A. Rafferty	1955	John B. Nano	1967
Harold L. Partridge	1928	Miczyslaw J. Wacławek Robert N. Hamilton	1946	Edwin J. Leonard	1956	Mafatbbai N. Patel George W. Pomfret	1967 1967
Edward T. Fox, Jr.	1930	Walter H. Hatch	1946B 1946B	Juozas Orentas Herbert P. Schoeck, Jr.	1956 1956	Carl R. Schenker	1967
Francis O. Carlstrom Monmatba N. Chakrabarty	1931 1931	Christopher A. Herbert	1946B	Robert C. Skelton	1956	Vishram S. Shinde	1967
Lewis S. Haskins	1931	William J. Kelly	1946B	Thomas E. Weber	1956	Francis J. Posselt, Jr.	1968
Arthur B. Brainerd, Jr.	1932	Philip R. Loshin	1946B	Santo M. Bramande	1957	Malay C. Shetb	1968
Edward F. Donohue	1932	Allan W. McCoy	1946B	Edward M. Dennett, Jr.	1957	Donald R. Shurtleff	1968
Paul R. Olson	1932	Elton K. Morice, Jr.	1946B	Robert D. Tent	1957	Jas P. Singh	1968
George E, Oman	1932	A. Lewis Rogers, Jr.	1946B	Benjamin G. Uy Roger R. Billings	1957 1958	Huseini T. Tambawala	1968 1969
Ellis R. Brown Stepben S. Haynes	1933 1933	Sidney S. Sperling George C. Fritz	1946B 1946C	Frank K. Lind	1958	Raj K. Chauhan Harivadan R. Parikh	1969
Cbarles H. Newsome	1933	Irwin G. Benkert	1946D	Richard E. Lorenz	1958	Rambhai J. Patel	1969
Thomas F. McLoughlin	1933	Dr. Myer Krulfeld	1946D	Nicbolas S. Petralias	1958	Sbashikant M. Patel	1969

THE JOURNAL 19

HOMECOMING 1970 OCTOBER 24

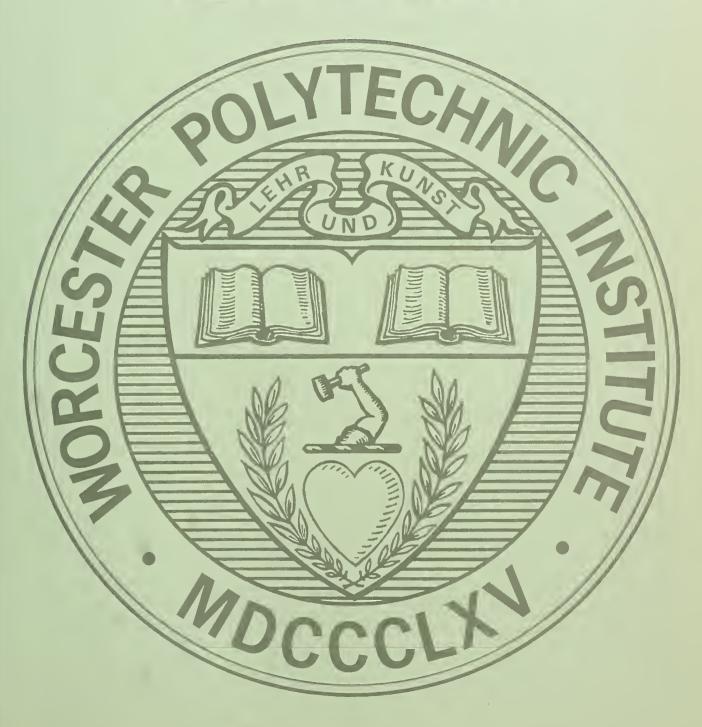
9:30-11:30 REGISTRATION
10:00-11:30 COFFEE HOUR
11:00 SOCCER/COAST GUARD
11:45-1:00 TAILGATE PICNIC & BARBEQUE
2:00 FOOTBALL/COAST GUARD
4:30 REFRESHMENTS IN MORGAN HALL
4:30-6:00 REUNION—CLASSES OF 1954-1958
6:00 BUFFET DINNERS IN FRATERNITIES

Watch for something special for the Class of 1970

FALL ATHLETIC SCHEDULES

	OCCER	FRESHMAN S			FOOTBALL	VARSITY	
			Oct.				Sept.
3:30 P.M.	Away	Univ. of Mass.	15	1:30 P.M.	Away	Union	19
3:30 P.M.	Home	Dean Jr.	22	2:00 P.M.	Home	Bowdoin	26
3:00 P.M.	Home	Worcester Acad.	28				Oct.
1:30 P.M.	Away	Leicester Jr. Col.	31	2:00 P.M.	Away	Middlebury	3
				2:00 P.M.	Home	Bates	10
RY	COUNTRY	VARSITY CROSS		1:30 P.M.	Away	Wesleyan	17
			Sept.	2:00 P.M.	Home	Coast Guard	24
		Worc. State	30	1:30 P.M.	Away	R.P.I.	31
4:00 P.M.	Away	Assumption-Clark					Nov.
(Quadrangular)				1:30 P.M.	Home	Norwich	7
,			Oct.		FOOTBALL	FRESHMAN	
2:30 P.M.	Away	B.P.I. – M.I.T.	3				Oct.
	Home	Wesleyan	6	3:00 P.M.	Away	R.P.I.	2
	Home	Bates	10	8:00 P.M.	Away	Coast Guard	9
	Away	Tufts	13	2:30 P.M.	Home	Tufts	23
4:00 P.M.	Away	Brandeis	21				
1:00 P.M.	Away	Bentley	24		SOCCER	VARSIT	
	Home	Williams-Coast Guard	31				Sept.
2.001.111.	7701110	Timania Godat Godat		2:00 P.M.	Away	Hartford	26
			Nov.	3:45 P.M.	Away	Holy Cross	30
12:00 Noon	Away	Trinity - Amhurst	7				Oct.
				2:00 P.M.	Home	Tufts	3
₹Y	COUNTRY	FRESHMAN CROSS		3:30 P.M.	Home	M.I.T.	7
			Oct.	11:00 A.M.	Home	B.U.	10
2:00 P.M.	Away	R.P.I. – M.I.T.	3	3:30 P.M.	Home	Lowell	15
4:15 P.M.	Home	Wesleyan	6	2:00 P.M.	Away	Clark	17
4:00 P.M.	Away	Tufts	13	3:30 P.M.	Away	Assumption	20
4:15 P.M.	Home	Worc. Academy	19	11:00 A.M.	Home	Coast Guard	24
4:30 P.M.	Home	Leicester Jr. Coll.	23	2:00 P.M.	Away	UMass	27
			Nov.				Nov.
12:00 Noon	Away	Trinity - Amherst	7	2:30 P.M.	Home	A.I.C.	4

1969-1970 WPI ANNUAL ALUMNI FUND REPORT



				CLASS	TOTAL	S — June 3	0, 1970				
GI	Contrib-	% Participation of	Amount	Class	Contrib-	% Par- ticipation o Members	f Amount	Class	Contrib- utors	% Par- ticipation of Members	f Amount
Class	utors	Members	Amount	Class	utors						
1896-1899	2	50%	150.00	1926	59	51%	2,720.00	1950	72	32%	1,975.00
1900	1	25%	5.00	1927	40	45%	1,324.00	1951	70	35%	3,401.13
1901	4	44%	120.00	1928	55	53%	2,390.00	1952	61	35%	1,557.00
1902	2	50%	35.00	1929	47	52%	2,000.00	1953	51	29%	1,511.00
1903	5	50%	195.00	1930	49	42%	3,135.82	1954	44	33%	1,383.00
1904	2	50%	125.00	1931	51	43%	2,618.00	1955	37	27%	860.00
1905	2	22%	150.00	1932	47	42%	2,880.00	1956	39	26%	940.00
1906	4	38%	50.00	1933	61	48%	3,515.90	1957	58	28%	1,888.00
1907	13	54%	630.00	1934	52	46%	1,855.00	1958	65	30%	1,789.00
1908	10	44%	345.00	1935	55	49%	2,497.50	1959	61	24%	1,330.00
1909	11	50%	375.00	1936	47	43%	1,807.00	1960	62	28%	1,826.00
1910	14	44%	645.95	1937	46	43%	2,237.00	1961	72	24%	1,923.63
1911	7	28%	325.00	1938	56	41%	2,609.00	1962	52	21%	1,145.00
1912	15	41%	882.00	1939	55	39%	2,455.00	1963	53	23%	1,674.00
1913	26	55%	2,045.00	1940	58	37%	2,190.00	1964	60	21%	1,136.00
1914	20	46%	1,739.14	1941	51	34%	2,747.63	1965	63	21%	1,283.00
1915	28	52%	2,217.00	1942	66	40%	2,070.00	1966	53	18%	942.00
1916	29	42%	2,128.75	1943	56	40%	1,212.00	1967	58	17%	1,066.00
1917	39	52%	3,985.00	1944	51	32%	2,303.00	1968	63	18%	1,947.00
1918	17	33%	831.64	1945	57	53%	5,902.00	1969	41	13%	583.00
1919	23	56%	1,345.00	1946	28	21%	952.00	Hon. &			
1000	4.0	400	10 001 00	104CD	20	1 00%	792 00	Othoma	17		E COO OE

18% 33%

32%

28% 52%

30%

20

4

18 22

63 75

783.00 67.00 455.00

727.00

2,035.00

2,467.00

17

2,917

Others

Totals

Grand Total

Matching Gifts

5,608.05

\$148,403.67

32% \$134,011.79 . . . 14,391.88

1946B 1946C

1946D

1947

1948

1949

1920

1921 1922

1923 1924

1925

24

49%

48%

52%

46%

34%

32%

12,981.00

1,930.00

2,570.00

1,340.00 1,423.00 1,710.65

I	DISTRICT TO	TALS — J	une 30, 1970				
				1969	9-70	1968	-69
District	No. in District	No. of Gifts	Amount Received	% Participation	Average Gift	% Participation	Averag Gift
Pittsburgh	91	45	\$ 2,960.00	49.5%	\$65.78	63%	\$53.45
Northern California	140	69	2,575.00	49.3%	37.32	40%	42.20
Southeastern	95	42	1,587.50	44.2%	37.79	34%	31.30
Detroit	75	33	1,996.00	44.0%	60.48	36%	36.0
Northern New Jersey	441	188	10,759.95	42.6%	57.23	46%	36.7
Los Angeles	216	82	3,733.38	38.0%	45.53	29%	40.0
Cleveland	98	37	1,302.00	37.8%	35.19	49%	34.2
Rhode Island	262	97	2,970.00	37.0%	30.62	57%	20.9
Rochester-Genesee	104	38	1,276.13	36.5%	33.58	43%	32.5
Boston	801	286	9,738.00	35.7%	34.05	35%	40.6
Vorcester	1,324	467	22,560.09	35.3%	48.31	32%	41.9
Vestern New York	75	26	982.00	34.7%	37.77	34%	35.0
fartford	612	206	8,364.00	33.7%	40.60	38%	38.0
Connecticut Valley	350	115	3,892,00	32.9%	33.84	33%	41.7
Philadelphia	353	109	3,995,00	30.9%	36.65	42%	37.5
Central New York	107	33	1,405,00	30.8%	42.58	36%	31.9
Vew Haven	419	128	5,279.00	30.5%	41.24	35%	35.5
Vashington	370	113	6.914.00	30.5%	61.19	45%	40.7
North Shore	297	88	3,275,15	29.6%	37.22	30%	33.0
Chicago	105	31	1,365.00	29.5%	44.03	27%	38.4
Hudson-Mohawk	135	39	2,131.13	28.9%	54.64	29%	53.0
Vew York	542	153	7,324.00	28.2%	47.87	32%	49.0
acific Northwest	37	9	455.00	24.3%	50.56	30%	61.8
Berkshire	68	16	500.00	23.5%	31.25	33%	28.5
Vilmington	149	27	1,440.00	18.1%	53.33	-	20.0
Cincinnati	50	8	280.00	16.0%	35.00	32%	27.0
Out of District	1.813	413	18,654,41	22.8%	45.17	21%	44.3
Others & Honorary	1,010	19	6,298.05	22.670	45.17	21%	44.0
TOTALS	9,129	2,917	\$134,011.79	32.0%	\$45.94	-	\$40.5
Matching Gifts	5,125	2,017		32.0%	\$40.94	34%	\$40.0
GRAND TOTAL			\$ 14,391.88				

ANNUAL ALUMNI FUND REPORT-1969-70

Dear Alumni and Friends of WPI:

Congratulations! We have set another record for total contributions to the Annual Alumni Fund. A year ago we set a record for gifts of \$119,822.00, and we surpassed that this year with a final total of \$134,011.79. In addition, \$14,391.88 was contributed by corporate matching gift programs making total contributions to the 1969-70 Annual Alumni Fund a record-setting \$148,403.67.

The only disappointing note to the program was our low percentage of participation. Only 32.0% of our alumni contributed to the Fund, a disappointing figure in view of our goal of achieving 50% participation this year.

Contributions by alumni are an important source of revenue for colleges, particularly for private colleges. It is through the efforts of faithful alumni that a high-quality education can continue to be provided for WPI's students.

On behalf of the Alumni Fund Board and the entire solicitation team, thank you for your continued support of your alma mater.

Sincerely

Irving James Donahue, Jr., '44 Chairman

1969-70 Annual Alumni Fund

MEMBERS OF CLUBS

	•••		2200		
THE PRESIDENT'S CLU	JВ	Milton E. Berglund	'26	Everett Hutchins	'15
		Dwight E. Jones	'28	Raymond P. Lansing	'15
Earl C. Hughes	'14	Alexander L. Naylor	'28	Edwin T. Warren	'15
Alfred W. Francis	'17	Oliver B. Merrill	'31	Carl H. Burgess	'16
Moses H. Tease	'17	Herbert A. Stewart	'31	Leslie J. Chaffee	'16
Frederic R. Butler	'20	Edward J. Abendschein	'35	Simon Collier	'16
John Q. Holmes	'20	William R. Steur	'35	Roland D. Horne	'16
Burton W. Marsh	'20	Richard F. Burke, Jr.	'38	James C. Walker	'16
Carlton J. O'Neil	'20	Leonard H. White	'41	Selden T. Williams	'16
Robert A. Peterson, Sr.	'20	Olavi H. Halttunen	'45	Aurelio E. Zambarano	'16
William E. Hanson	'32	George E. Comstock, III	'46	Andrew B. Holmstrom	'17
Arthur E. Smith	'33	Peter B. Myers	'46B	John M. Leggett	'17
James J. Clerkin, Jr.	'45	John H. Williams	'49	Philip C. Pray	'17
Robert C. Wolff	'51	comi ii. wimanis	40	John R. Wheeler	'17
James J. Powers	'68			Levi E. Wheeler	,17
				Benjamin Luther	'18
THE DEAN'S CLUB				Edmond E. Moore	'18
THE DEAN'S CLUB				Howard S. Foster	'19
Arthur B. Schofield	'13	THE CENTURY CLU	В	Richard L. Olson	'19
Ralph M. Johnson	'15			Thomas B. Rutherford	'19
George W. Smith, Jr.	'15	Ellery B. Paine	'97	Robert C. Sessions	'19
George R. Rich	'19	Richard J. Dearborn	'03	Paul M. Abbott	'20
Harold B. Whitmore	'21	Edwin M. Roberts	'04	Chester W. Aldrich	'20
Weston Hadden	'22	Harold B. Larned	'05	Arvid E. Anderson	'20
Wayne E. Keith	'22	Percy M. Hall	'07	Malcolm B. Arthur	'20
J. Kendall Fullerton	'29	Arthur J. Knight	'07	Frederick W. Bauder	'20
Carl W. Backstrom	'30	Donald H. Mace	'07		'20
Aram Kalenian	'33	Percy C. Smith	'07	C. Harold Berg Harold D. Boutelle	'20
Francis S. Harvey	'37	Leon W. Hitchcock	'08		'20
Charles C. Bonin	'38	Oliver B. Jacobs	'10	Charles A. Gammal Milton W. Garland	'20
George W. Knauff	'41	Daniel H. Reamy	'10		'20
Irving James Donahue, Jr.	'44	Edmund M. Flaherty	'11	Paul J. Harriman	'20
		G. Allan King	'11	Richard A. Heald	'20
		Fred G. Munson	12	Percy A. Hill	'20
THE JOHN BOYNTON CI	LUB	Frederick S. Carpenter	'13	Richard F. W. Johnson Raymon F. Meader	'20
T T. 01	14.0	George C. Graham	'13		'20
James J. Shea	'12	David G. Howard	'13	Harry C. Merritt	'20
Edmund K. Brown	'13	Harry B. Lindsay	'13	Albert R. Rienstra	'20
Frank G. Gifford	'16	Norris D. Pease	'13	Hobart D. Sanborn	'20
Arthur Nutt	'16	J. Arthur Planteroth	'13	Harry W. Tenney	'20
Norman P. Knowlton	'18	Leon H. Rice	'13	Ernest Thompson, Jr. Oliver R. Wulf	20
Herbert E. Brooks	'20	Donald M. Russell	'13		'21
Raymond B. Heath	'20	Roland H. Dufault	'14	Frank K. Brown	'21
Harold G. Hunt	'20	Carl F. Fritch	'14	Philip K. Davis	'21
George L. White	'20	Ellwood N. Hennessy	'14	William L. Martin	'21
Helge S. Johnson	'24	George Ross	'14	Lyle J. Morse John S. Nason	'21
David C. Bailey	'25	Frederick P. Church	'15		,21
Luther B. Martin	'25	G. Noble Davidson	'15	Paul S. Sessions	21

Lincoln Thompson	'21	Luther C. Leavitt	'34	Clark L. Poland	'48
		Charles W. McElroy	'34	James S. Adams	'49
Charles I. Babcock	'22	Everett F. Sellew	'34	James M. Genser	'49
Neil T. Heffernan	'22	Howard E. Stockwell	'34	Edward A. Luiz	'49
Lawrence K. Hyde	'22	John B. Coyle	'35		
Lloyd F. McGlincy	'22	-		Stanley E. Sherman	'49
Edwin L. Sholz	'22	James J. Gushaw	'35	Donald Taylor	'49
Edwin B. Coghlin	'23	Leonard G. Humphrey, Jr.		Burl S. Watson, Jr.	'49
Wallace C. Hathaway	'23	Frederick W. McIntyre, Jr.		Henry S. C. Cummings, Jr.	
Percival E. Meyer	'23	Raymond J. Quenneville	'35	William C. Griggs	'50
Richard Walberg	'23	M. Kent Smith	'35	Robert F. Stewart	'50
J. Norman Alberti	'24	Plummer Wiley	'35	G. Albert Anderson	'51
Edward G. Beardsley	'24	Harold S. Burr	'36	Robert N. Cochran	'51
Thomas L. Counihan	'24	Harold F. Henrickson	'36	Rafael R. Gabarro	'51
Leslie J. Hooper	'24	John J. O'Donnell	'36	Edward A. Kacmarcik	'51
Harry L. Hurd	'24	Stedman W. Smith	'36	Frank A. MacPherson	'51
John N. Styffe	'24	Arthur D. Tripp, Jr.	'36	Donald F. Stockwell	'51
Donald B. Wilson	'24	Robert C. Wright	'36	John M. Tracy	'52
Daniel L. Hussey	'25	Erving Arundale	'37	Orren B. McKnight, Jr.	'53
	'25	Philip G. Atwood	'37	Anthony J. Ruksnaitis	'53
James C. Irish		Martin G. Caine	'37	David T. Van Covern	'53
Henry L. Mellen	'25	Gordon F. Crowther	'37	Richard D. Kirk	'54
L. Ivan Underwood	'25	C. Chapin Cutler	'37	Douglas B. MacLaren	'54
Thomas G. Wright	'25				'54
Oliver H. Brewster	'26	Morton S. Fine	'37	Harry L. Mirick, Jr.	
Phillip R. Delphos	'26	Charles R. Michel	'37	Walter A. Reibling	'54
Charles M. Healey, Jr.	'26	Richard J. Donovan	'38	Edwin Shivell	'54
Archie J. Horne	'26	Richard M. Elliott	'38	Edwin B. Coghlin, Jr.	'56
Eugene M. Hunter	'26	Thomas B. Graham	'38	Donald F. Berth	'57
Chandler W. Jones	'26	Walter E. Knapp	'38	John W. Braley, Jr.	'57
John S. Miller	'26	Raymond J. Perreault	'38	Allan E. Carlson	'57
Charles M. Moran	'26	John B. Scalzi	'38	Richard J. Ferguson	'57
Donald F. Sears	'26	Robert M. Taft	'38	Edward J. Moineau	'57
George J. Heckman	'27	Walter L. Abel	'39	David E. Stuart	'57
Charles F. Monnier	'27	Jack F. Boyd	'39	David S. Crimmins	'58
Carleton R. Sanford	'27	Wilder R. Carson	'39	Philip M. French, Jr.	'58
Harold G. Butterworth	'28	William L. Kay	'39	Roger A. Jolicoeur	'58
Frederick H. Knight	'28	Arthur H. Mallon	'39	Marian C. Knight	'58
William M. Lester	'28	Robert W. Martin	'39	William M. Aitken	'60
William A. Manty	'28	Ward D. Messimer	'39	Joshua C. Alpern	'60
	'28	Billie A. Schmidt	'39	Dwight M. Cornell	'60
Robert M. Tucker		Frans E. Strandberg	'39		'60
Charles A. Warren	'28	Donald R. Bates	'40	Benjamin B. Morgan	
Nathaniel Clapp	'29		'40	Bradley E. Hosmer	'61
Lothar A. Sontag	'29	William S. Brooks		Arthur W. Kroll	'61
Russell C. Wiley	'29	Malcolm S. Burton	'40	Robert E. Seamon	'61
C. Eugene Center	'30	Raymond J. Forkey	'40	Bruce W. Woodford	'61
Charles H. Cole	'30	Howard G. Freeman	'40	Rimas A. Zinas	'61
John W. Conley	'30	Robert E. Higgs	'40	Nicholas Cotsidas	'62
Robert E. Hollick	'30	Russell A. Lovell, Jr.	'40	Keyren H. Cotter, Jr.	'62
Clifford B. Ives	'30	Lawrence C. Neale	'40	Arthur E. Goddard, II	'63
William W. Locke	'30	S. Merrill Skeist	'40	Robert H. Gowdy	'63
Paul B. Morgan, Jr.	'30	Stanley M. Terry	'40	Russell E. Person	'63
Albert N. Narter	'30	Donald T. Atkinson	'41	Thomas S. Baron	'64
Daniel F. O'Grady	'30	George A. Cowan	'41	Thomas J. Modzelewski	'64
Fred P. Peters	'30	Kenneth R. Dresser	'41	Maurice R. Silvestris	'64
M. Lawrence Price	'30	Joseph P. Jurga	'41	Robert H, Cahill	'65
Warren C. Whittum	'30	Robert A. Muir	'41	Chester J. Sergey, Jr.	'65
Uuno O. Annala	'31	Donald F. Palmer, Jr.	'41	Peter G. Stebbins	'66
Albert M. Demont	'31	William C. Richardson	'41	Thomas Y. Liu	'67
Paul H. Fittz	'31	Donald E. Smith	'41	Robert G. Balmer	'68
Eben H. Rice	'31	Homer R. Arev	'42	Craig F. Bradley	'69
		Roy F. Bourgault	'42 '42	orang r. Brauley	0.0
Trueman L. Sanderson	'31				
Nicholas S. Sculos	'31	Philip J. Hastings	'42	THE BOOSTER CLUI	R
Robert S. Williamson	'31	Howard C. Warren	'42	THE BOOKTER OFF	
William W. Asp	'32	Samuel W. Williams, Jr.	'42		
Fred A. Bickford	'32	Richard F. Dyer	' 43	Frank C. Harrington	'98
Linn M. Lockwood	'32	Herbert Asher	'44	George K. Howe	'01
Donald J. McGee	'32	George W. Collins	'44	Joseph W. Rogers	'01
Paul E. Nelson	'32	David M. Field	'44	Ernest C. Morsc	'05
Henry B. Pratt	'32	Harrison E. Holbrook, Jr.	'44	James E. Smith	'06
Donald W. Putnam	'32	Fred S. Moulton	'44	P. Alden Beaman	'07
William F. Reardon	'32	Joseph D. Carrabino	'45	Joseph F. Cullen	'07
Leon D. Skuropat	'32	Paul M. Craig, Jr.	'45	Royal W. Davenport	'08
Sidney Thunc	'32	Robert M. Edgerly	'45	George A. Barratt	,09
Robert E. Ferguson	. '33	Anson C. Fyler	' 45		
Kenneth E. Gleason	'33	Howard D. Gerring	'45	Fred F. Chapman	'09
Gilbert U. Gustafson	'33	William C. Howard, Jr.	45 '45	Joseph K. Schofield	'09
Harry T. Jensen	'33			Ralph D. Whitmore	,09
Edwin L. Johnson	'33	Robert E. Scott	`45	William R. Bell	10
John A. Birch	'34	Edward A. Pendleton	`46	Millard F. Clement	10
Warren H. Davenport		Lawrence T. Garnett	'47	Edward A. Hanff	10
	'34	Allan Glazer	'47	Clarence W. Taft	'11
Dwight J. Dwinell	'34	Albert S. Goldberg	'48	Frank M. McGowan	12
Clayton E. Hunt, Jr.	'34	Sameer S. Hassan	'48	Edward J. Dahill, Jr.	'13

Henry J. Schaefer	'13	Karl W. Penney	'28	Albert J. Kullas	'38
Farguhar W. Smith	'13	Donald P. Reed	'28	John G. Lawrence	'38
Albert S. Crandon	'14	Gordon E. Rice	'28	Daniel G. Mazur	'38
Benjamin B. D'Ewart	'15	Roger K. Stoughton	'28	Donald F. Pethybridge	'38
	'15	Clifford Broker	'29	Francis B. Swenson	'38
Frank Forsberg		Carl H. Carlson	'29	Charles H. Amidon, Jr.	'39
Russell N. Hunter	'15		'29	Harrison K. Brown	'39
Charles B. Hurd	'15	Stephen D. Donahue	'29	John K. Busada	'39
Ulric J. LeBourveau	'15	Robert M. Eccles			
Edward R. Nary	'15	O. Vincent Gustafson	29	Malcolm R, Chandler	'39
Maurice G. Steele	'15	Robert S. Heald	'29	Arthur N. Cooley	'39
J. Arthur Blair	'16	Holbrook L. Horton	'29	Donald E. Houser	'39
Harold W. Howarth	'16	Milton F. Labonte	'29	Carl A. Keyser	'39
Joseph E. Murphy	'16	Halbert E. Pierce, Jr.	'29	Albert A. Nims, Jr.	'39
Harold G. Saunders	'16	John W. Burt	'30	Edward J. Roszko	'39
Clinton S. Darling	'17	Herbert W. Davis	'30	Richard B. Wilson	'39
Arthur E. Gorman	'17	William H. Doyle	'30	Kenneth R. Blaisdell	'40
Robert C. Hanckel	'17	Stanley H. Fillion	'30	Joseph M. Halloran, Jr.	'40
Russell H. Smith	'17	Thomas F. Flynn	'30	Harding B. Jenkins	'40
Walter B. Dennen	'18	Ralpb H. Gilbert	'30	John H. Peters, 111	'40
Leroy W. Vinal	'18	Carmelo S. Greco	'30	Lawrence R. Sullivan	'40
		Lincoln B. Hathaway	'30	David B. Zipser	'40
Howard A. Mayo	'19		'30	Marvin Handleman	'41
Charles W. Staples	'19	Herbert F. Hillis	'30	Frank R. Lindberg	'41
Raymond D. Bishop	'20	Francis E. Kennedy		F. Douglas McKeown	'41
George B. Blaisdell	'20	George A. Marston	'30	Herman Medwin	'41
Henry B. Townsend	'20	Philip M. Seal	'30	Hilliard W. Paige	'41
Albert L. Woodward	'20	F. Dudley Chaffee	'31		'41
Robert E. Chapman	'21	Henry N. Deane	'31	Russell W. Parks	
Richard P. Penfield	'21	Milton D. Gleason	'31	F. William Ziegler	'41
Carl E. Skroder	'21	William Graham	'31	Robert E. Allen	'42
Irving R. Smith	'21	Jay M. Harpell	'31	Gerald J. Bibeault	'42
Earl H. Winslow	'21	Otis E. Mace	'31	Paul C. Disario, Jr.	'42
Charles N. Clarkson	'22	John A. Mott	'31	Norman A. Kerr	'42
William H. Cooney	'22	J. Philip Pierce	'31	Richard H. Kimball, Jr.	'42
Robert W. Cushman	'22	A. Francis Townsend	'31	Frederic C. Merriam	'42
Richard D. Field	'22	Oliver R. Underhill, Jr.	'31	Alexander Mikulicb	'42
	,22		'32	Rodney G. Paige	'42
Wilfred H. Howe		Dana B. Carleton		Victor H. Thulin	'42
Fred Pickwick, Jr.	'22	Olof W. Nyquist	'32	Paul C. Yankauskas	'42
John V. Russell	'22	Hugo P. Borgatti	'33	Warren B. Zepp	'42
George V. Upton, Jr.	'22	Charles S. Brewer	'33	Robert A. Bierweiler	'43
J. Carleton Adams	'23	Herman W. Dorn	'33	Jackson L. Durkee	'43
Lincoln A. Cundall	'23	Leighton Jackson	'33	Victor E. Kohman	'43
Kenneth E. Hapgood	'23	Carroll M. Johnson	'33	Earl G. Page, Jr.	'43
Edward B. Johnson	'23	George W. Lyman	'33		'43
Weston Morrill	'23	Richard T. Merrell	'33	James J. Pezza	'43
Howard S. Nutting	'23	H. Edward Perkins, Jr.	'33	Robert P. Seaton	
Frederick H. Scheer	'23	Robert C. Peterson	'33	Bruce E. Smyth	'43
Richard H. V. Shaw	'23	Frederick M. Potter	'33	Gordon C. Anderson	'44
Edward J. Burke	'24	Franklin B. Roberts	'33	C. Edward Bean	'44
Warren B. Fish	'24	Jeremiah H. Vail	'33	Erling Lagerholm	'44
Carroll C. Tucker	'24	Albert S. White, Jr.	'33	Richard W. Russell	'44
Stephen J. Vouch	'24	Harold B. Bell	'34	Charles P. Stowell	'44
•		Allan R. Catheron	'34	John G. Underhill	'44
Carl F. Carlstrom	'25	Ernest M. Crowell	'34	John N. Wholean	'44
Urban R. Lamay	'25	Curtis A. Hedler	'34	Frank C. Baginski	'45
David J. Minott	'25	George Kalista	'34	Edwin G. Baldwin	'45
Harold A. Baines	'26	John H. Keenan	'34	Carl C. Clark	'45
Richard S. Boutelle	'26	Philip C. Sherburne	'34	Harold D. Fleit	'45
Ormond J. Chinnock	'26	Paul J. Sullivan	'34	Martin R. Flink, Jr.	'45
Frederick D. Fielder	'26	Gordon P. Whitcomb	'34	Louis J. Hallisey	'45
Donald L. Hager	'26	B. Austin Coates		John T. E. Hegeman	'45
Clyde W. Hubbard	'26		'35	Philip A. Henning	'45
Henry G. Mildrum	'26	C. Marshall Dann	'35	Burton L. Hinman, Jr.	'45
Harry C. Peinert	'26	Phillip S. Dean	'35	John B. McMaster	'45
William A. Russell	'26	Joseph Glasser	'35	Robert C. Appenzeller	'46
Mabbott B. Steele	'26	Emerson J. Robinson	'35	James Bush, Jr.	'46
Charles J. Thompson	'26	Charles S. Smith	'35	Joseph H. Johnson, Jr.	'46
	'26	Kingston C. Smith	'35	Albert E. Rockwood, Jr.	'46B
Irvin S. Webster	'26	Leo T. Benoit	'36	John Lee	'46D
Emerson A. Wiggin		John R. Brand	'36	Joseph P. Manna	'46D
George L. Bush	'27	Earl M. Curtis	'36	Robert W. Schramm	'46D
Edward F. Cabalen	'27	Walter G. Dahlstrom	'36	Adelbert W. Whitman	'46D
Victor E. Hill	'27	C. James Ethier	'36	Daniel W. Knoll	'47
Charles MacLennan	'27				'47
Dean L. Merrill	'27	Robert Fowler, Jr.	'36	Paul D. O'Donnell	
Charles S. Moore	'27	Jacob A. Sacks	'36	William J. Rice	'47
William M. Rauha	'27	Benjamin H. Smith, Jr.	'36	Samuel Ringel	'47
Carl H. Schwind	'27	Caleb D. Hammond	'37	Samuel W. Cocks	'48
Donald S. Searle	'27	Richard J. Lyman	'37	Norman L. Diegoli	'48
Russell G. Whittemore	'27	William Price	'37	Paul E. Evans	'48
W. Bigelow Hall	'28	J. Morrison Smith	'37	Niel I. Fishman	'48
A. Everett Lawrence	'28	Robert B. Abbe	'38	Richard K. Horne	'48
Roland C. Mather	'28	Robert P. Day	'38	Norman J. Jardine	'48
Harland L. Page	'28	Neil A. Fitzgerald	'38	Charles F. Jones	'48

	240	David M. Elovitz	'53	Robert Kieltyka	'59
James G. McKernan	'48	John H. Gearin, Jr.	'53	Roger W. Kuenzel	'59
Alan R. Pearlman	'48	Richard J. Hall	'53	Richard S. Orehotsky	'59
Daniel H. Sheingold	'48	David B. Hallock	'53	Ronald F. Swenson	'59
Sturgis A. Sobin	'48	Philip J. Kaminsky	'53	Edwin D. Tenney	'59
Walter J. Charow	'49	William G. Mears	'53	Mark H. Abramowitz	'60
Richard J. Coughlin	'49		'53	Paul W. Bayliss	'60
Malcolm E. Ferson	'49	Donald G. Post Leo A. Salmen	'53	Ronald A. Carlson	'60
Peter Kalil	'49		'53	Richard P. Harding	'60
Daniel L. McQuillan	'49	Philip E. Simon, Jr.	'53	David A. Johnson	'60
William J. Ploran	'49	Michael S. Zucker	'54	Sang K. Lee	'60
Edward W. Randall	'49	Joachim Herz	'54	Kenneth L. Matson	'60
John J. Wheeler	'49	S. Paul London	'54	Bruce E. Schoppe	'60
John F. Brierly	'50	Fabian Pinkham	'54 '54	Bernard J. Seastrom	'60
John P. Burgarella	'50	George D. Ramig	'55	Bernard L. Tetreault	'60
Henry S. Coe, Jr.	'50	Gerald R. Backlund	'55	Henry P. Allessio	'61
Donald W. Dodge	'50	Peter H. Horstmann		Robert R. Hale	'61
R. Reed Grimwade	'50	Philip Lincoln	'55 '55	Thomas E. Postma	'61
Robert J. Hallisey	'50	Donald M. McNamara			'61
Richard E. Hathaway	'50	Reynald J. Sansoucy	'55	Lloyd W. Pote	
Arthur W. Joyce, Jr.	'50	Robert J. Schultz	'55	Andrew M. Edelman	'62
Paul D. May	'50	Gordon E. Walters	'55	Thomas J. Tully	'62
Richard C. Olson	'50	Allan R. Hunderup	'56	Myron R. Waldman	'62
Robert E. Smith	'50	John L. Hyde, II	'56	Robert P. Wilder	'62
Henry Styskal, Jr.	'50	Hans H. Koehl	'56	Joseph V. Bucciaglia	'63
Bruce M. Bailey	'51	David A. Pratt	'56	David E. Dunklee, Jr.	'63
Ashton B. Brown	'51	Roy A. Seaberg, Jr.	'56	Earl T. Fratus	'63
Arthur H. Gerald, Jr.	'51	Peter J. Stephens	'56	W. Allan Lilius	'63
Halsey E. Griswold	'51	Fred H. Clark, Jr.	'57	John H. Sistare	'63
Harvey L. Howell	'51	Alex C. Papaioannou	'57	Peter L. Dornemann	'64
Charles F. Mulrenan	'51	Keith O. Preston	'57	William J. Museler	'64
Constantino Mustakis	'51 ·	William W. Rawstron	'57	John H. Schmidt	'64
Owen Ott	'51	Alvin E. Tanner	'57	Stanley Szymanski	'64
Dick van den Berge	'51	Robert P. Weis	'57	Peter K. Bice	'65
Daniel T. Bernatowicz	'52	Charles A. Whitney	'57	Stephen L. Cloues	'65
Albert N. Brauer	'52	David B. Denniston	'58	Philip C. Nyberg	'65
Charles F. Crathern, III	'52	William F. Gess, Jr.	'58	James W. Pierce	'65
David R. Fairbanks	'52	Robert A. Moore	'58	Wayne D. Pobzeznik	'65
Edward M. Felkel	'52	Joaquim S. S. Ribeiro	'58	David M. Schwaber	'65
Ray N. Fenno	'52	Bernard V. Ricciardi	'58	Donald E. McCarthy	'66
Donald M. Krauss	'52	Harvey G. Roberts	'58	Michael C. Napolitano	'66
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By P	erce	nta	ge o	f Pa	rtici	pati	on		
1. 1919								56%	
2. 1913								5 5 %	
3. 1907								54%	
4. 1945								53%	
5. 1928								53%	

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1960-1970									
1960-61							\$ 77,535		
1961-62							. 80,104		
1962-63							. 92,316		
1963-64					•		108,864		
1964-67			. С	ente	enni	al F	und Years		
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ANOTHER SUCCESSFUL U. N. MEETING

For the second time in as many years the New York and Northern New Jersey Alumni Chapters staged a joint effort and held a meeting at the United Nations building in New York City. The guest speaker this year was Israeli Ambassador Moshe Lashem who spoke about the Middle East situation. About 165 people attended the meeting.

A unique part of this meeting was the attendance of eight WPI undergraduates. Included were three juniors, one sophomore and four freshmen, including two coeds. Overnight accommodations for these people were graciously provided by Helge S. Johnson, '24, and Thomas B. Graham, '38 at their homes in Scarsdale, N.Y.

Arrangements for the meeting were once again capably handled by Stephen J. Spencer, '49 with the assistance of New York Chapter President, Spike Vrusho, '57, Northern New

Jersey Chapter President, Sang Ki Lee, '60 and Victor E. Kohman, '43. Prior to the 1969 meeting only one outside group, the Harvard Business School Alumni, had been able to arrange a meeting at the U.N.

Upon arriving at the United Nations, guests were able to tour the complex prior to the social hour and buffet dinner. Following the dinner, Ambassador Leshem addressed the gathering. He began lightly by talking about some of the ineffectiveness of the U.N. and the ability of the U.N. to handle a hot potato long enough for it to become a cold one.

In a more serious vein, the Ambassador noted some of the background of the Jews as a race, and as a nation. Throughout his speech he characterized the Israelis as a strong group, capable of carrying on their own affairs, while acknowledging that their losses, percentage-wise, would be,

and are, high. He was careful to point out that they would not ask for U.S. military involvement. It was his viewpoint that the conflict must be solved directly by the parties involved through peaceful negotiations. Warfare, he said, leads to military arrangements which obviously don't last. In another important point, he expressed his fears that increasing Soviet involvement will only bring about a political confrontation between the Soviet Union and the United States, a development which he said he hoped would be avoided.

The Ambassador proved to be an excellent speaker. He was brief and to the point, showing on several occasions an excellent sense of humor. It was another well-planned effort by the New York and Northern New Jersey Chapters and a successful venture once again.



Ambassador Leshem speaks to the large crowd. Seated at the head table are, left to right: Mrs. Vrusho, Spike Vrusho, '57, and Steve Spencer, '49.

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REUNION ROUNDUP



1910

CLASS OF 1910

Not daunted by an all-day rain, our 10+60 reunion got off to a good start with a social gathering Friday at 3 p.m. in Morgan Hall, followed at 7 p.m. by a cocktail hour and dinner of steaks and lobsters, plus the usual fillers, and seasoned by tales of sixty

years of varied experiences, some of them thrillers. The striking centerpiece on the table was a replica of our sundial, made by Millard Clement. Millard also presented his stirring poem: "Your Dial Speaks Again". At the table were Carl Atherton, Mr. and Mrs. Charles Barney, Mr. and Mrs. William



1911

Bell, Mr. and Mrs. Millard Clement, Allan Forbes, Alvan Grout, Mr. and Mrs. Edward Hanff and Oliver Jacobs.

A tour of the campus was most rewarding. Its well-placed, well-designed buildings, beautifully landscaped with evergreens, gorgeous Rhododendrons and Azalea shrubs in full bloom; and the huge oak trees which have stood the sixty years better than most of us. Carl so aptly expressed our feelings when he said, "It looks like WPI is in a state of affluence."

With the table cleared, we went into executive session and elected officers to serve until the next get-together, Ed Hanff thought that the ten years which he has served was enough. We thought that the salary (\$0.00 minus postage used) was bothering him. But even when we offered to double the salary and make it retroactive, he wouldn't budge, so the following were elected: President, Fred Hewes; Vice Presidents, Millard Clement and William Bell; Secretary, Charles Barney. After more visiting we separated, most of us to spend the night at Daniels Hall, where we found first-class accommodations: new linen on comfortable beds, fine ventilation, and everything clean and neat.

We awoke Saturday morning to another day of rain. Breakfast in Morgan Hall at 8:30 and registration at 9, where we received our badges and complimentary luncheon tickets. Here we were met by George and Mrs. Martin who were with us for the remainder of the day for class pictures, Alumni Reunion Luncheon, etc.

CLASS OF 1911

The Class of 1911 met on Friday, June 5 at Sterling Inn for their annual reunion.

Four members and three wives attended. Mr. & Mrs. Dave Carpenter, Mr. & Mrs. Hugh Reed, Mr. & Mrs. Clarence (Bill) Taft and Howard Chace who came alone since Mrs. Chace was in the hospital recovering from a heart attack.

A short business meeting was held with secretary and treasurer reports. Our bank balance was thought to be more than needed for current expenses so it was voted to withdraw \$150.00 and present it to the Alumni Office to be added to the Student Aid Fund established at our 50th reunion in 1961

An excellent dinner was enjoyed by all as usual, thanks to Mrs. Rose Mahoney who had a table set for us in a small private room.

Letters and greetings were read from several class members unable to attend.

Next year will be our 60th and we hope to have a good attendance, so any of you who can, please plan to join us.

Howard P. Chace, President



1912

CLASS OF 1912

At the Friday evening dinner at the Marlboro Country Club were: Joseph and Helen Granger, Eugene and Gertrude Powers, Henry and Madeline Rickett, Leon Treadwell, Edward Tucker, and Harrison Brown. These nine are the same as those of last year with the exception of Margaret Treadwell who was confined at home as a result of an accident.

The dinner was brightened by a telephone call from Eric Benedict, in Washington for the graduation of a grandson. He had written why he could not attend, but promised to be at our 60th in 1972 if he has to walk up from Cape Cod. He repeats his expression that he is "disgustingly healthy".

The business session was held at the home of our President, Joe Granger, but the business was little more than making sure that the Secretary-Treasurer was on the job.

With the deaths of Ralph Norton, Harry Button and Vaughn Griffin, our membership is now 34. The average age is 80.9 ranging from 79.3 to 85.7.

The book, "Theory of Sets" by N. Bourbaki, which we donated to the Gordon Library last year, was on display. A glance through its pages aroused our sympathy for students who now have to study modern mathematics.

\$2000 was awarded last year from the income of the Herbert Foster Taylor Student Aid Fund. A little more than that amount still remains available.

Fewer than usual were the letters received from members. Besides Benedict, those who explained their absence were Roger Towne, Jim Shea, and Harland Stuart. Harland's reason was the lack of T and E (time and energy) after a five day Baptist convention, working with 4H, and other forthcoming events. August Reinhard sent a card from Florida in February. Carl Norton writes he is still playing golf. Mrs. Cunningham in Florida repeated how much Jim thought of the 1912 class.

In April, a birthday card to James Hogan came back unopened marked "deceased", but a letter to the town clerk was returned with a note, "Mr. James Hogan is still very much alive". So we are still counting him in.

But the most prolific writer is Nibs (Ernest) Taylor of Conneaut, Ohio. Referring to the electric hoe which I mentioned in the Spring Journal, he explained that, after hearing of such a device, he travelled up and down the Nickel Plate Railroad hunting for one, only to find it in Conneaut. He will prepare a diagram of it at some future date to assure me it does exist. He claims superior knowledge as he is three days older than I, so I accept his fatherly advice.

Harrison G. Brown, Secretary

CLASS OF 1913

An informal gathering of 1913 men and wives was held at The Winchendon School, Winchendon, Mass., June 4th and 5th 1970, making it our 57th reunion.

Events started with a social hour and dinner Thursday evening and although Friday turned out to be rainy, everyone kept busy with either trips into the country, golf or shuffleboard. Another social hour and dinner were enjoyed Friday evening, followed by interesting discussions of past events and future plans, such as getting together at the same place next year.

Present were: George Chick, George Graham, Leon Rice, Arthur Burleigh, Farquhar Smith, and their wives, Ed Dahill and Harry Lindsay. Allen Gridley joined some of us at Worcester on Saturday morning.

Letters or messages were received from several members of the class, including Norris Pease, Fred Carpenter, Al Lorion,



1915

Bill Stultz, Jim Armour, Clarence Brock, Don Russell and Harvey Friars.

Arthur C. Burleigh, Secretary

CLASS OF 1915

There were five members of 1915 and two wives that gathered at the Sheraton-Yankee Drummer Motor Inn in Auburn. They were: Charles Hurd and Mrs. Hurd, Harrison Hosmer and Mrs. Hosmer, Carroll Lawton, Ulric Lebourveau and Frank Forsberg. We had a wonderful visit together over a good dinner, in quiet surroundings, and it went on from 7 p.m. to II p.m. Friday evening.

On Saturday, we were joined at the Alumni luncheon by Fred Church and Mrs. Church, Everett Hutchins and Earle Andrews.

Frank Forsberg, President

CLASS OF 1920

Thirty-seven members, twenty-nine wives and two guests were present for our 50th anniversary dinner at Franklin Manor on Friday night. Rain spoiled our plans for an afternoon outside in the garden, but a long session in the cocktail lounge afforded an excellent opportunity to get reacquainted with old friends; it was so crowded that you couldn't turn around without bumping into another classmate.

The following members and wives attended our Reunion: Arvid Anderson, Mal and Dorothy Arthur, Chet Aldrich, Fritz and Florence Bauder, Larry and Eleanor Bean, Harold and Elizabeth Berg, Ray and Stella Bishop, George and Charlotte Blaisdell, Herb and Jessie Brooks, Eliot Burbank. Fred Butler, Norman and Mary Firth. Charlie and Dorothy Gammal, Milt and Florence Garland, Paul Harriman, Dick and Pauline Heald, Ray Heath, Jack and Anne Holmes, Harold and Agnes Hunt, Helmer and Ethyl Johnson, Burt Marsh, Ray and Edith Meader, Harry and Jeannette Merritt, Jerry and Anna O'Neil, Bob and Sophie Peterson, Mal and Martha Quimby, Al Rienstra, Saul and Eva Robinson, Hobart and Erma Sanborn, Baalis Sanford, Homer Stevens, Harry and Lida Tenney, Ernie and Signe Thompson, Henry and Marion Townsend, George and Elizabeth White, Albert and Florence Woodward, Guy and Marjorie Woodward.

Letters of regret that they could not be here were received from Jack Burns who went to West Point after one year at WPI and is now a retired General living in Tacoma, Washington; from Lawrence Divoll who went to Annapolis and is now a retired Captain living in Los Altos, California; from Harold Boutelle who is moving into a new

home in Amherst, Mass: from Albert Shaw who worked for Worthington Corp. for 42 years - he says he and Marge are in excellent health but had a long-standing commitment to attend the graduation of their twin grandchildren in North Carolina - they live at 187-87th Avenue, North, St. Petersburg, Florida 33702 and would be pleased to hear from any classmates living in Florida; from Les and Gladys Wightman, whose retirement started June 2, a long telegram from their new home, 5320 Mustang Way, Carmichael, California, with heated swimming pool, where they would be pleased to see any friends who might be out that way

If there were a prize for traveling the longest distance, it would have to go to Mal and Dorothy Arthur who came from California by way of Europe, arriving back in Worcester June 3rd.

After a well-prepared and expertly served dinner, Mal Arthur, our Class President, took over, conducted a brief business meeting and explained the program for the Alumni Meeting on Saturday. After being away so many years, he led the singing of the Alma Mater, first instructing those of us who have been around this area all these years, just how it should be sung. Mal had done his homework.

We have several expert photographers who take marvelous pictures of their travels and who showed them after dinner. Guy Woodward provided the projection equipment and showed pictures of large, immaculately maintained estates in Virginia, the Botanical Gardens in Norfolk and fields and streams alive with dogwood; also beautiful wild-life scenes in Maine, New Hampshire,

Vermont and Massachusetts. He also showed pictures of damaged and worn antique furniture which they pick up. Guy does the physical restoring necessary and Marg does the finishing to make stunningly beautiful and usable show-pieces.

Paul Harriman had just returned from a tour of the World's Fair in Tokyo and showed slides of the major exhibits, with particular emphasis on the large, transparent spheres suspended from an overhead track running around the entire exhibition grounds, each sphere seating several passengers and rotating slowly as it moves along the overhead track, thus affording the passengers an unobstructed view of all areas of the Fair.

Hobart Sanborn showed beautiful pictures of their automobile trip thru the Canadian Rockies in the summer with the temperature comfortable and the sun shining, but ice and snow everywhere from the mountain peaks right down to the road. A magnificent summer trip for them — they spend the winters in Florida now — but not for me, I still shovel snow and chop ice all winter!

Jack Holmes had put together a series of slides from each of our reunions since graduation. Some classmates shown are no longer with us and we miss them very much. Those of us still around are not as agile as the pictures showed. That beautiful golf swing follow-thru of twenty-five years ago has been lost somewhere along the way. These pictures made us all feel so old that we adjourned.

The moderate rain on Friday turned into a downpour on Saturday, necessitating the abandonment of all outdoor Alumni



1920

E JOURNAL



1925



1930

Day activities. We joined the Fifty-Year Associates at their meeting in Daniels Hall at 10:30. All other activities were confined to Morgan Hall which was so crowded that any organized activity was impossible. Our colorful vests which were intended for hot, outdoor weather did not show up so well in a crowded room, but they should look better in the Class Picture.

At the Alumni Luncheon we had an opportunity to hear a discussion of the reorganization of Alumni activities which has been recommended by an Alumni Committee after intensive study and will be reported in detail elsewhere.

We had an opportunity to hear President George Hazzard and to receive individual Fifty-Year Certificates from him.

Mal Arthur presented the 1920 Class Gift of over ten thousand dollars to President Hazzard. Since this was entirely voluntary with no personal solicitation, we are very proud of the generous response.

We also took the Attendance Cup with 51% of our members present and Mal Arthur accepted it on behalf of the Class with very appropriate words of appreciation.

We then went our way in the rain with the hope that we may all meet again in 1975.

Fred Butler, Secretary

CLASS OF 1925

The Class of 1925 had a very small turn-out this year for their 45th Reunion.

The Reunion activities were arranged by Roy Payne and the first activity of the weekend was a dinner party at the Worcester Country Club. On Saturday, the members of the Class who were in attendance participated in the Reunion activities on the campus.

The Class is looking forward to its 50th Reunion in 1975.

CLASS OF 1930

One of the largest turnouts in years for the class of 1930 showed up for the get-together and dinner at the Worcester Country Club the afternoon and evening of June 5, 1970. Four played golf as the weather was not the best.

One hundred seventeen cards were sent out and we had replies from seventy-five, which I do not consider a good return. Thirty-four members signed up for dinner, but due to sickness, etc. only thirty-one showed up. Twenty-six wives and four guests were present.

After a delicious steak dinner, the new President of WPI, Dr. Hazzard, gave an interesting talk after which our feature



1935

speaker, Professor Wellman, retired from the M.E. Department, gave a most interesting talk on the good old days from 1908 till 1926. Stories and even a song or two brought the memories of those years back to us.

Dan O'Grady, our nominating chairman, submitted the slate for the next five years of: "Charlie" Fay for President, Gene Center for Vice President and Carl Backstrom for Secretary-Treasurer. They were quickly voted in before they could change their minds.

Several people were unable to attend the reunion for one reason or another, and their letters or remarks made on the return cards were read to the group.

Two of our class came back for the first time in forty years. They were Bob Hollick and wife and "Ed" Delano, both from California. Ed Delano did it the hard way, by bicycle, being thirty-one days en route. (See the story about him elsewhere in the Journal).

After our dinner meeting, dancing was enjoyed by many along with the class of 1940.

Saturday the rain still came down and the class picture was held inside. We all had plastic white hats with 1930 on them and made quite a group.

After the annual Alumni luncheon, thirty-five members and wives went to Charlie Fay's home in Sterling where we enjoyed a real good get-together over late afternoon refreshments, and it was a fitting way to close out the 40th reunion.

Thank you, Charlie and Ingrid, for the use of your home.

Plans have already been started for our 45th and 50th reunions and also the class gift. You will be hearing about these later this year.

The following members were present either at the Worcester Country Club on Friday or the Alumni Luncheon on Saturday, most of them at both:

Henry Allen, Mr. and Mrs. Carl Backstrom, Mr. and Mrs. Gene Center, Mr. and Mrs. Robert Bennett, "Wally" Carlson, Mr. and Mrs. Charles Cole, Mr. and Mrs. John Conley, Mr. and Mrs. Joe Cogshill, Al

Corbin, Mr. and Mrs. William Davidson. "Ed" Delano, Mr. and Mrs. Charlie Fay, Mr. and Mrs. Thomas Flynn, Mr. and Mrs. Walt French, Mr. and Mrs. Carmelo Greco, Mr. and Mrs. "Linc" Hathaway, Mr. and Mrs. Goodnow, Mr. and Mrs. Robert Hollick, Mr. and Mrs. Dan Horgan, Mr. and Mrs. Irving Joseph, Mr. and Mrs. Fran Kennedy, Professor and Mrs. "Bill" Locke, Mr. and Mrs. George Marston, Mr. and Mrs. Percy Marsaw, Mr. and Mrs. James McLoughlin, Mr. and Mrs. "A1" Narter, Mr. and Mrs. "Dan" O'Grady, Dean and Mrs. Lawrence Price, Mr. and Mrs. "Bim" Purcell, Mr. and Mrs. "Joe" Tawter, "Tommy" Tompkins, Mr. and Mrs. Vernon Wade, Mr. and Mrs. Warren Whittum, Mr. and Mrs. Harold Williamson, and Mr. and Mrs. Ellis Whitaker. Carl W. Backstrom, Secretary

CLASS OF 1935

Thirty-three members of the Class of 1935 enjoyed a very pleasant evening at The Old Mill in Fitchburg on Friday evening, June 5. After a delicious buffet-style dinner, our class Vice President, Marsh Dann, acted as master of ceremonies, giving everyone a chance to expound on his accomplishments over the past thirty-five years. I think one could say our greatest success in life was the number of children and grandchildren by the members with the able support of their respective wives. A few of the members were sporting beards, mustaches or both, but there seemed to be a scarcity of hair rather than an excessive amount of it. Allan Hardy won the honor of having the youngest child, Christopher, 12 years old. Jo



1940

Jodaitis had the greatest number of grandchildren — six. Lester Libby of Los Altos Hills, California came the greatest distance.

A short business meeting was held and Marsh Dann was elected President with Allan Hardy as Vice President. Gordon Swift was elected chairman of the 1975 reunion. Jack Healy showed some films taken at WPI back in 1932-1933 which proved most amusing.

The 1970 reunion committee with Ted Cole as chairman are to be congratulated on a job well done. Booklets with a complete class roster were presented to each member with Len Humphrey the editor, aided by Jean Wiley who designed the cover. Those members fortunate enough to attend are as follows: Mark Abelson, Austin Coates, Ted Cole, Ed Cronin, Marsh Dann, Phil Dean, Joe Glasser, Ray Granger, Jim Gushaw, Pret Hadley, Al Hardy, Fran Harrington, Jack Healy, Len Humphrey, Jo Jodaitis, Joe Johnson, Rog Lawton, Hal LeDuc, Les Libby, Ted McKinley, Don MacMillan, Ray Moeller, Homer Morrison, Rolly Nims, Charlie Puffer, Vic Sepavich, Don Steeper, Dave Smythe, Ray Starrett, Roy Swenson, Speed Swift, Doug Watkins and Plum Wiley. Ray Starrett, Secretary

CLASS OF 1940

Forty-three classmates and wives gathered June 5-7 for our 30th reunion. Activities began on Friday at Worcester Country Club with lunch, bowling, golf and a tour of the Worcester Craft Center — followed by a Dinner/Program/Dance until midnight and beyond.

Ray Forkey served as Master of Ceremonies and introduced College President, Dr. George W. Hazzard, who outlined major college changes during the past year and indicated further innovations in the years ahead. Dr. Al Schweiger (Honorary Classmate) and Phyllis joined us for the evening with Al reminiscing interesting past times and updating certain Institute programs.

Treasurer, Frank Crosby, reported a balance in our account of \$238 and a charge of \$12 per person for the evening and costumes. Frank also announced a total of \$24,829 in our Wat Tyler Cluverius Class of 1940 Scholarship Fund with the income of about \$1000 per year going to student aid. After discussion, it was voted unanimously to promote the doubling of this fund during the next 10 years through contributions by the Class of 1940 above and beyond the regular Alumni Fund.

A moment of silence was observed for deceased members during the past five years: Dan Rosenthal, Ken Fowler, Walt Graham and Ben Lambert.

Historian Fritz Johanson reported on the 68 returned questionnaires.

Clark Goodchild displayed the variety of class reunion decorations of parasols, sunflowers, headband-feathers and balloons. Ken Blaisdell distributed some 40 door prizes. Also in attendance were our two trustees, Ray Forkey and Howard Freeman. Alumni President, Bob Higgs, outlined WPI Association activities of the past year.

Each attendee gave a thumbnail sketch of his present activities. The most spectacular member was bearded Rolfe Johnson who flew in from Milwaukee in his own plane. Randy Whitehead entertained at the piano.

Others in attendance included Frank Gustafson, Bob Hewey, Dave Kuniholm, Bob Dunklee, Russ Lovell, Dick Messinger, Art Morin, John Peters, Mike Sadick, Tarry Terkanian, Ev Smith and Fran Stone.

Robert E. Dunklee, Secretary

CLASS OF 1945

The 25th anniversary reunion brought 36 members of the Class of 1945, most of them with their wives, to the celebration at the Yankee Drummer Inn in Auburn on June 6, following the Alumni Day activities on the camous.

The class voted to give its anniversary gift to WPI for the purchase of library books. George Kennedy served as master of ceremonies during the presentation of prizes for several categories of unique accomplishments. Included was the first presentation of the 1945 "Oh My Goddard" award to

Anson Fyler who earlier in the day had been presented the Alumni Association's Goddard Award. The small ceramic trophy with the finger grip handle was duly inscribed with a message indicating that we feel he is still just one of the boys.

Statistics gathered before the reunion, with sixty members responding, gave a picture of pure "Establishment". All who replied have married, and only one reported a divorce and remarriage. The average '45 has 3.3 children, lives in a single family house in a community of 50,000 or less, owns two cars and participates in community or political activities. More than half have never smoked or gave it up. The complete statistics are available in an anniversary yearbook available from Roger Perry at WPI.

Those attending the reunion included: Frank C. Baginski, John C. Bayer, Edward C. Berndt, Jr., James J. Clerkin, Paul M. Craig, Jr., Eugene W. Cray, William P. Densmore, Howard Dember, Robert M. Edgerly, Richard S. Fitts, Martin R. Flink, Jr., Anson C. Fyler, Olle H. Halttunen, John T. Hegeman, Burton L. Hinman, William C. Howard, John P. Hyde, Tex Hoyt, John H. Jacoby, Charles H. Johnson, Franklin S. June, George J. Kennedy, Owen W. Kennedy, Jr., Paul N. Kokulis, Ernest R. Kretzmer, Robert W. Lotz, Walter P. Matzelevich, Charles A. Morse, Jr., Roger N. Perry, Jr., Roger P. Roberge, Robert E. Scott, Lionel H. Seccomber, Jr., Charles C. Shattuck, Edward I. Swanson, John A. Templeton, George V. Uihlein, Jr.

Philip Sheridan, Secretary



1945

IN MEMORY

BURTON ADAMS PRINCE, '98

BURTON ADAMS PRINCE, '98, died on May 13, 1967, at the age of 90. His last address was Clive Road, Southwick, Massachusetts.

Mr. Prince was born on October 27, 1876 in Worcester and attended Worcester High School. In 1898, after receiving his diploma in mechanical engineering from WPI, he enlisted in the 2nd Massachusetts Volunteers and fought in Cuba with Teddy Roosevelt. He also went to France during World War I with the YMCA. He helped establish the Westfield (Mass.) Trade School in 1911 and was its first director. He was employed for 35 years as a bridge engineer with the Irving Iron Works Co.

In 1903, he married the former Nettie Oakley. They had no children.

M. CLIFTON NELSON, '02

M. CLIFTON NELSON, '02, died on February 27, 1970, at his home, 558 Shrewsbury Street, Holden, Mass. He was 88.

Mr. Nelson was born in Worcester in 1881 and attended English High School. He studied mechanical engineering at WPI.

After graduation he held various supervisory positions with several Worcester area companies, until 1922 when he became president of Rolled Thread Die Company in Worcester. In 1932 he became the proprietor of Beacon Thread Rolling Die Company, also in Worcester, and remained there until his retirement in 1952.

Among his survivors is his nephew, Forrest S. Nelson, WPI, '28. In 1905 he married the former Ella Louise Knight. They had four children: Mrs. Louise Woodrow; Donald K.; Mrs. Barbara Johnson and Howard S.

ARTHUR ALEXANDER ARNOLD, '03

ARTHUR ALEXANDER ARNOLD, '03, died at Beverly (Mass.) Hospital on January 14, 1970. He was 88.

Born in Webster, Mass., in 1881, he attended the local schools. At WPI he studied mechanical engineering.

Among the companies for which Mr. Arnold worked during his career were: American Optical Company in Southbridge, Mass. as a mechanical and development engineer; A. C. Gilbert Company in New Haven, Conn., as chief engineer; R. Wallace

and Sons, Silversmiths, in Wallingford, Conn., as a development engineer; and finally, Olin Mathieson Corporation's Winchester Western Div. in New Haven, Conn. in various engineering capacities. He retired in 1954.

He leaves his wife, the former Nellie M. Stowe of West Millbury, Mass.; a son, Arthur A., Jr.; two grandchildren; and two great-grandchildren.

RUSSELL WILLIAM MAGNA, '04

RUSSELL WILLIAM MAGNA, '04, died on January 30, 1970 at the age of 91. His last address was 770 Florence Rd., Northampton, Mass.

Born in 1878 in Worcester, Mass., Mr. Magna attended Holyoke (Mass.) High School. He majored in mechanical engineering at WPI and was a member of Sigma Alpha Epsilon fraternity.

In 1905 he created the Magna Automobile Co., in Holyoke, Mass. He was president and treasurer until his retirement in 1959. Mr. Magna once recalled that in the early days of automobiles, a salesman's first job in selling was teaching the buyer to drive.

RAYMOND CHESTER WILLIAMS, '07

RAYMOND CHESTER WILLIAMS, '07, passed away on May 10, 1970 in Columbus, Ohio.

Mr. Williams was born in Conway, Mass. on October 27, 1883 and attended Orange (Mass.) High School. He entered WPI in 1902 and majored in mechanical engineering. He graduated in 1907.

Mr. Williams spent most of his business career in the paper industry. On graduation from WPI he went to work for the U.S. Envelope Company in Worcester, Mass. and later transferred to U.S. Envelope Company operations, first in Cincinnati and then in Indianapolis in 1916. In 1920 he joined the Central Ohio Paper Company and opened an envelope manufacturing plant as part of their wholesale paper business in Columbus, Ohio. He managed this operation for thirty years until his retirement in 1950.

He is survived by his widow, Linnie K. Williams; a son, Benjamin K. Williams; two grandchildren; and five great-grandchildren.

FRANK MONZON AGUIRRE, '09

FRANK MONZON AGUIRRE, '09, passed away in Hialeah, Florida on May 19, 1970.

Mr. Aguirre was born on Sept. 23, 1887 in Brooklyn, New York. He attended Cushing Academy, Ashburnham, Mass. before entering WPI in the fall of 1904. He graduated in 1909 with a bachelor of science degree in civil engineering. While at WPI he was a member of Phi Sigma Kappa fraternity and also was the founder and first president of the Cosmopolitan Club.

Mr. Aguirre spent fifty-one years of his life in Latin America, forty-two of these in what he once termed a "prosperous Cuba" and another four years in what he also termed "a destroyed Cuba."

After graduation, Mr. Aguirre moved to Cuba to the town of Cienfuegos and continued to be employed in that area for several more years until 1928, when he did public utilities investigations in the countries of Peru, Chile and Argentina. In 1929 he returned to Cuba, and except for brief periods after that time, remained there until 1938 when he became Division Manager, Santa Clara, Cia Cubana de Electricidad, an electric company serving one and one-half million people, and fifty-six cities and towns.

He was active in the American Society of Civil Engineers, College of Cuban Civil Engineers, Sociedad Argentina de Luminicultura, Rotary Club and the Red Cross.

VAUGHN DAVID GRIFFIN, '12

VAUGHN DAVID GRIFFIN, '12, died on January 27, 1970, in Ormond Beach, Florida, Memorial Hospital, at the age of 80. He lived at 429 Ocean Shore Boulevard in Ormond Beach.

Mr. Griffin was born in 1889 in Henniker, New Hampshire, and went to Manchester (N.H.) High School. He studied mechanical engineering at WPI. His fraternity was Phi Sigma Kappa.

Mr. Griffin and his late brother owned and operated a shoe company in Manchester, N.H. until 1924, when he joined Northwestern Mutual Life Ins. Co. in Manchester as a special agent. He retired in 1959 after 30 years as a general agent.

His memberships included the Kiwanis Club and the Masons.

Survivors include his wife, the former Beatrice Bays; two sons, Willard H. and Frederick W.; two daughters, Mrs. Jane Greene and Mrs. Danylee Glick; and 13 grandchildren.

COL. COBURN LEE BERRY, '16

Col. COBURN LEE BERRY, '16, U.S.A. (retired), died on February 28, 1970 at the Naval Hospital in Pensacola, Florida after a long illness. His last address was 428 South 2nd St., Warrington, Florida.

Born in 1894 in Portland, Maine, he attended the local high school. He majored in chemistry at WPI.

Col. Berry joined the army in 1917 and spent 18 months in France during World War I, during which he was promoted to captain. After the war he returned to America and served as battery commander at such posts as Fort Warren, Mass.; Fort Monroe, Va.; Fort Arrancas, Fla.; Forts Amador and Randolph, Canal Zone; and Fort Hancock, N.J. In 1935 he was promoted to major and went to the University of Minnesota on ROTC duty. In 1940, as an instructor in the Minnesota National Guard, he became a lieutenant colonel. Later he went to Camp Wallace, Texas as battalion commander, group commander and executive officer. There, in 1941, he was promoted to colonel. In 1942 he became director of the Div. of Training Publications, Antiaircraft Artillery School, at Camp Davis, N.C., where he remained until his retirement in 1944.

In 1923 he married the former Mary Ann Cowley. They had two daughters, Mary Lee and Patricia Ann.

HERBERT NELSON EATON, '16

HERBERT NELSON EATON, '16, died on April 18, 1970, at the Avalon Manor Nursing Home in Hagerstown, Md. He was 77.

Mr. Eaton was born on November 4, 1892, in Auburn, Mass. He attended Rindge Manual Training School in Cambridge, Mass., and majored in civil engineering at WPI. He received an AM from Johns Hopkins University in 1923. He was a member of Lambda Chi Alpha, Sigma Xi, and Tau Beta Pi.

Mr. Eaton retired in 1953 after 32 years with the National Bureau of Standards in Washington, D.C. For the past 17 years, he was an engineering consultant.

His memberships included ASME and the National Society of Professional Engineers.

He leaves his widow, the former Hazel Kefover; two sons, Herbert N. and Arthur M.; and a daughter, Mrs. Jacob Ornstein.

PHILIP EUGENE BARKER, '17

PHILIP EUGENE BARKER, '17, died suddenly on January 20, 1970. He lived in Clearwater, Florida.

Born in Orange, Mass. on March 22, 1896, he attended the local high school. He majored in mechanical engineering at WPI and was a member of Theta Chi and Tau Beta Pi.

After serving in France with the U.S. Army Engineers during World War I, he was employed by the New Home Sewing Machine Co. in Orange until 1930, when he joined the Pneumatic Scale Corp. Ltd., in Ouincy, Mass. He retired in 1958 as assistant treasurer. He was a Mason and belonged to

the National Association of Accountants.

He is survived by his widow, the former Marie L. Ladd; a daughter, Mrs. Jane Lesh; and three grandchildren.

SETH GREENLEAF SMITH, '17

SETH GREENLEAF SMITH, '17, passed away unexpectedly at his home in Amherst, N.H. in April, 1970.

He was born March 5, 1893 in Nashua, N.H. and attended Concord (N.H.) High School. He entered WPI in 1912 and majored in mechanical engineering.

Mr. Smith spent several years in the Hartford, Conn. and Springfield, Mass. area working as an engineer for Bay State Forge Co., Gilbert and Barker Mfg. Co. and Storms Drop Forging Co. He was later employed as a safety engineer for the Heald Machine Co. in Worcester, Mass. and lived for the past eight years in Amherst, N.H.

He is survived by his widow, Meredith Peirce Smith; a son, Seth G. of Somerset, N.H.; and three grandsons and a niece.

JOHN DAVID STORRS, '1B

JOHN DAVID STORRS, '18, passed away on April 7, 1970 at Cape Cod Hospital, Hyannis, Mass. after a brief illness.

He was born on July 11, 1896 at Hastings, Maine and attended Newport (Vt.) High School and Bordentown Military Institution before entering WPI in 1914. He graduated in 191B with a degree in mechanical engineering. While at WPI he was a member of Sigma Alpha Epsilon fraternity and Skull as well as being a football player and a member of the WPI Athletic Association and Interfraternity Council.

Mr. Storrs went to work for the Kinney Mfg. Co., Boston, Mass., as a tool designer after his graduation. He was employed by that company for forty years as assistant chief engineer. In 1958 he left to join the U.S. Navy Public Works, Boston Div., as supervising mechanical engineer. In 1961 he retired. He had been a resident of Cummaquid, Mass. for eight years at the time of his death.

He leaves his wife, Mildred (Lovis) Storrs; two sons, Mansur and Barrie; and two daughters.

LEROY W. VINAL, '18

LEROY W. VINAL, '18, died at his home on April 26, 1970 after a short illness.

Born March 10, 1895 in Leominster, Mass., he attended Leominster High School and entered WPI in 1914. He was a mechanical engineering major and graduated in 1918. He was a member of Lambda Chi Alpha Fraternity and was active on the tennis team. He was tennis team captain in 1918.

A lifelong resident of Leominster, Mass., he worked for E. I. DuPont de Nemours & Co. until his retirement ten years ago.

He leaves his widow, Mrs. Pearl M. (Farnsworth) Vinal; a son, William of Northboro, Mass.; a daughter, Mrs. David MacDonald of Wayland; and seven grand-children.

HOWARD A. MAYO, '19

HOWARD A. MAYO, '19, passed away in Marlboro, Mass. hospital on April 4, 1970. He was 73.

Born in Wellesley, Mass., February 18, 1897, he attended secondary school at Framingham High School. He entered WPI in 1915 and graduated in 1919 with a BS degree in mechanical engineering.

Mr. Mayo was a well-known water power specialist with a detailed technical knowledge of hydroelectric equipment and its economic application. He served the water power users and their consulting engineers for more than 45 years. He was manager of the New England office of S. Morgan Smith Co. until his retirement in 1965. Many of the New England pumpstorage sites are under study today as a result of his personal efforts promoting the new type of hydro-electric power source. For the last several years he had been associated with Alonzo B. Reed, Inc., engineering consultants of Boston.

He was elected a trustee of WPI in June, 1948 and served two terms as a member of that Board. He was a member of the National Society of Professional Engineers, the Newcomen Society in North America and had served on the Bolton, Mass. park commission since its inception in 1948. He was also a member of the Masons and the Bolton Historical Society.

Besides his widow, Dorothy (Ordway) Mayo, he leaves three sons, two brothers, two sisters and seven grandchildren.

ROGER M. LELAND, '22

ROGER M. LELAND, '22, died suddenly in Glover Memorial Hospital in Needham, Mass. on May 5, 1970. He was 74.

Mr. Leland was born on March 3, 1896 and entered WPI in 1919. While at WPI he was a member of Sigma Alpha Epsilon fraternity.

Born in Winchester, Mass., and a resident of Needham for the past six years, he was formerly of Wellesley, Mass. He was a salesman of chemicals for the Rust-Lick Co. of Boston at the time of his death.

Mr. Leland had also attended MIT and had served his country as an officer with the army in World War I. He was a member of the American Society of Tool and Manufacturing Engineers and a number of professional societies.

He is survived by his wife, Grace (Cros-

by) Leland of Needham, two daughters and nine grandchildren.

WALLACE C. HATHAWAY, '23

WALLACE C. HATHAWAY, '23, passed away on January 25, 1970 in Providence, R. I. He was 68.

Born on January 31, 1901 at Somerset, Mass., he attended Fall River Technical High School before entering WPI in 1918. He graduated in 1923 with a BS degree in civil engineering and was a member of Lambda Chi Alpha Fraternity.

Mr. Hathaway had been self-employed for many years as an owner in the firm of Hathaway and Davis, a certified public accountant firm located in Fall River, Mass. He was a member of the A.I.C.P.A., Rhode Island SCPA, the Rotary and the Lions Clubs.

Among the survivors are his widow, Helen (Lawton) Hathaway.

THOMAS L. COUNIHAN, '24

THOMAS L. COUNIHAN, '24, passed away in Florham Park, N.J. on June 2, 1970. He was 67.

A loyal and devoted alumnus, Mr. Counihan was born on February 12, 1903 in Worcester, Mass. and attended Classical High School in Worcester. He entered WPI in 1920 and graduated in 1924 with a BS degree in chemistry. He was a member of Phi Kappa Theta Fraternity.

He began his industrial career in 1924 at Crompton & Knowles Loom Works in Worcester, working as a metallurgist. Over the next 13 years he held positions with Indian Motorcycle Co., Greenfield Tap & Die Co., Simonds Saw & Steel Co., all as a metallurgist, and in 1939 he joined the Hyatt Bearings Division of the General Motors Corp. as assistant chief metallurgist. In 1942 he was promoted to chief metallurgist with that division which he held until his retirement.

A popular and hardworking alumnus, Mr. Counihan was often an officer of the Northern New Jersey Alumni Chapter, serving that chapter as President, Vice President, and as a Council Representative over the years. As a member of the WPI Alumni Council he served on the executive committee as member-at-large, as a junior vice president and as a senior vice president in 1954-1955. He also served the Alumni Association as a member of the Alumni Fund Board for six years from 1951-1957 and served his alma mater as a trustee of the Institute from 1958-1968. In June, 1966 he received the Herbert F. Taylor Award for outstanding service to his alma mater.

He was a member of the American Society of Metals, American Society of Testing & Materials, Society of Automotive Engineers and the Metal Science Club of New York.

Mr. Counihan leaves his wife, Mrs. Theresa Q. Counihan.

ALLEN C. KIMBALL, '24

ALLEN C. KIMBALL, '24, passed away on April 22, 1970 in Acton, Mass. He was 68.

He was a graduate of Worcester Academy and he entered WPI in 1920. A retired fruit grower, he had been associated with his brother in the operation of Kimball Fruit Farm in Pepperell, Mass. since 1922.

Mr. Kimball is survived by his widow, Louise (Hills) Kimball, a daughter, three sisters and a brother.

PAUL R. MARSH, '24

PAUL R. MARSH, '24, passed away at the age of 79 on May 9, 1970 at the Central Vermont Hospital in Berlin, Vt. following a short illness

He was born in Maynard, Mass. January 23, 1891. He attended Springfield, Mass. schools and was a graduate of Central High School there in 1908.

Mr. Marsh also attended Norwich University where he received a BS degree and was a five sport athletic standout. He was also a former All-Western Massachusetts football player. He received his master's degree in education from Boston University and spent 32 years in various positions in

the Springfield, Mass. school system, holding the position of director of research at the time of his retirement. He spent the years of his retirement in Vermont.

Mr. Marsh was with the Vermont National Guard as a first lieutenant and in the Mass. State Guard as a lieutenant colonel during World War II. He was a member of Theta Chi Fraternity, Masons and the American Legion.

He is survived by a son, Robert F. of Northfield, Vt. and a daughter of Agawam, Mass., along with five grandchildren.

ALFRED K. MORGAN, '24

ALFRED K. MORGAN, '24, passed away on October 15, 1969.

Mr. Morgan was born on April 22, 1901 in North Andover, Mass. and attended Manchester, N.H. High School. He entered WPI in 1920 and graduated from MIT in 1925 with a degree in electrical engineering. While at WPI he was a member of Theta Chi Fraternity and Skull.

Since 1940 he had been chief engineer and general manager of the Palisades Interstate Park Commission. In this position with the park commission he was responsible for the operation of such parks as Palisades, Storm King and Bear Mountain among others.

He was a member of the American Society of Civil Engineers, the American

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THOMAS G. WRIGHT, '25

THOMAS G. WRIGHT, '25, passed away on April 22, 1970 in Fort Lauderdale, Fla. He was 66.

Born on October 13, 1903 in Worcester, Mass. he attended secondary schools at the Palmer, Mass. High School prior to entering WPI in 1921. He graduated in 1925 with a BS degree in mechanical engineering. He was a member of Lambda Chi Alpha Fraternity, Tau Beta Pi, Sigma Xi and Skull.

Upon graduation from WPI, Mr. Wright joined Public Service of N.J. as an engineer and later was employed by Bird & Son of East Walpole, Mass. as assistant to the plant engineer. In December of 1930 he joined the Pittsburgh Plate Glass Co. of Pittsburgh, Pa. and was associated with that company for 33 years. He retired from PPG in 1958 and had spent his retirement in Fort Lauderdale.

He was a member of the Board of Directors of Plaza East Apartments, Fort Lauderdale, Florida and had been active in the YMCA.

He is survived by his widow, Florence Wright, a son, Thomas Wright, Jr. of Hollywood, Fla., two sisters and two grandsons.

CHARLES B. MUZZY, '2B

CHARLES B. MUZZY, '2B, passed away in Pittsfield, Mass. on April 6, 1970.

Born on July 4, 1905 in Worcester, Mass., Mr. Muzzy had attended South High School in Worcester prior to his entrance at WPI in 1924. While at WPI he was a member of Phi Sigma Kappa Fraternity and Skull and he graduated in 1928 with a BS degree in mechanical engineering.

He had worked for 42 years for the E.D. Jones division of the Beliot Corp., Pittsfield, Mass. with many of those years being spent in the field of sales.

He leaves his widow, Mabel L. (Jones) Muzzy, a son of North Caldwell, N.J., a sister of Kensington, Conn. and two grandsons.

WILLIAM J. THACKER, '2B

WILLIAM J. THACKER, '28, passed away at St. John's Hospital in Springfield, III. on March 31, 1970. He was 65.

A native of Monson, Mass., Mr. Thacker was born on Sept. 5, 1904 and attended Monson Academy. He entered WPI in 1923 and graduated in 1928 with a BS degree in electrical engineering. He was a member of Theta Chi Fraternity.

He had been employed by the General Electric Co. in the sales department's distri-

bution cutout section in Pittsfield, Mass. for 25 years prior to moving to Springfield, III. in 1954. In Springfield he was sales manager of the power capacitor and control section of the Sangamo Electric Co.

Survivors include his widow, Anne (Connolly) Thacker, three daughters and seven grandchildren.

MARIO PAGNONI, '29

MARIO PAGNONI, '29, was pronounced dead on arrival at Springfield (Mass.) Hospital Medical Center on March 23, 1970 after collapsing at his home. He was 64.

Born in Italy on Feb. 9, 1906, he came to this country when he was eight years old and settled in Springfield. He attended Technical High School in Springfield prior to entering WPI.

Mr. Pagnoni had been building inspector for the city of Springfield, Mass. for 30 years before his retirement in 1966 because of illness. For several years he had also had his own architectural and land surveying business. He had also been active in many church, civic and social organizations.

He leaves his widow, Mrs. Filomena Pagnoni, a son, Mario P. and a daughter, Claire.

HARRY M. WARDLE, '32

HARRY M. WARDLE, '32, died on March 6, 1970 in Ouincy, Mass. after a brief illness. He was 60.

Born on October 3, 1909 in Nutley, N.J., Mr. Wardle attended preparatory school at Worcester Academy before entering WPI in 192B.

He had lived in Quincy for 21 years and was a structural designer for Charles T. Main, Inc. of Boston. He was active in many church and school activities and had been a founder, past president and member of two different Quincy PTA groups.

He is survived by his widow, Frances Wardle, three sons and two sisters.

JOHN R. CASLER, JR., '36

JOHN R. CASLER, JR., '36, passed away in Clearwater, Florida on January 30, 1970.

Mr. Casler was born on November 26, 1914 in Northampton, Mass. and attended Northampton High School prior to entering WPI in 1932. He graduated from WPI in 1936 with a BS degree and received an MS degree from WPI in 1938. He was a member of Theta Chi Fraternity, Tau Beta Pi and Sigma Xi.

After graduation from WPI in 1938 he accepted a position as process engineer for

Standard Oil Development Co. of N.J., a position which he held for 10 years prior to becoming assistant manager of Standard Oil Co. of Cuba. In 1952 he became process superintendent for the International Petroleum Co. In 1958 he went to Iran where he was employed by the Iranian Oil Refining Co. He retired from the Standard Oil Co. of N.J. in 1963.

ISAAC M. ARENBERG, '37

ISAAC M. ARENBERG, '37, a resident of Rochester, Mass. passed away suddenly in Brooklyn, N.Y. on April 26, 1970 while visiting relatives. He was 55.

Born in Rochester, Mass. June 16, 1914, he attended Rochester schools and was a graduate of Univ. of Mass. in 1936 and was a member of Tau Epsilon Pi Fraternity.

Mr. Arenberg was a bus contractor and a cranberry grower. He was owner and manager of the Arenberg Bus Co. in Rochester. The bus company served many of the area Rochester schools. He was a member of the Lions Club and was active in the Boy Scouts.

Survivors include three daughters, one brother and two grandchildren.

CHARLES R. DICKSON, '37

CHARLES R. DICKSON, '37, died on March 29, 1970 in New England Baptist Hospital in Boston, He was 57.

Mr. Dickson was born August 28, 1912 in Paris, France and attended preparatory school at St. George's School, Avon Old Farms in Avon, Conn. He attended Brown University before entering WPI in 1933.

An Army veteran of World War II, he was a member of the Hope Club in Providence and the National Rifle Association.

A sister, Mrs. Julia Baldridge of Middletown, Conn., survives.

WILLIAM C. GREANY, '37

WILLIAM C. GREANY, '37, passed away on April 27, 1970 at the Veterans Administration Hospital, Jamaica Plain, Mass. where he had been a patient for five weeks

A native of Billerica, Mass. he was born June 5, 1912 and attended Wakefield High School. He entered WPI in 1933 and also received a law degrea from Suffolk University in 1941.

A member of a prominent Wakefield family, Mr. Greany had been a meteorologist for the U.S. Coast Guard Weather Station at Rockport, Mass. and also was active in a real estate and a law business. He was formerly a member of the American Legion.

He is survived by his sister and ona neice.

CARLETON P. VINAL, '37

CARLETON P. VINAL, '37, passed away at his home in Thomaston, Conn. on November 7, 1969.

Born in Brooklyn, N.Y. on November 14, 1914 he attended Montclair High School before becoming a mechanical engineering major at WPI in 1933.

Mr. Vinal had been employed by the Heald Machine Co. in Worcester, Simmonds Precision Products Co. of Vergennes, Vt., and the Scoville Manufacturing Co. At the time of his death he was quality control supervisor for the Universal Industries division of Simmonds Precision Products in West Haven, Conn. He was a member of the American Society of Tool and Manufacturing Engineers, ASQC and the Masons.

WALTER P. RODGERS, '39

WALTER P. RODGERS, '39, died on December 23, 1969 in Middlesex General Hospital, New Brunswick, N.J. after a long illness. He was 54.

Born in the Belgian Congo, Africa, the son of missionaries, Mr. Rodgers was a graduate of Bates College in Lewiston, Maine and entered WPI in 1937. He received a BS degree in civil engineering in 1939.

For two years after his graduation from WPI Mr. Rodgers was a designer for the Metropolitan Water Commission, Hartford, Conn. In 1941 he joined the American Bridge division of the U.S. Steel Corp. as an engineer. At the time of his death he was assistant national director of engineering for the Boy Scouts of America and was located in New Brunswick, N.J.

He is survived by his wife, the former Ruth Springer, one daughter, three sisters, and one brother.

GERALD J. SUMMERSON, '45

GERALD J. SUMMERSON, '45, passed away on April 29, 1969 after a long illness.

Born on November 19, 1923 in Emporium, Pa., he attended Emporium High School before entering WPI in 1943. He graduated on October 24, 1944 with a BS degree in civil engineering.

Mr. Summerson was employed by the Pennsylvania Department of Highways for five years and by the U.S. Steel Corp. from 1951-1953. In 1953 he formed the consulting engineering firm of Pickering Corts & Summerson, Inc. and was president of that corporation at the time of his death. The business was located in Newtown, Pa. He also held a commercial pilots license.

He was a member of the American Society of Highway Engineers, National Society of Professional Engineers and was a licensed engineer in Pa., N.J., N.Y. and W.

He is survived by his widow, Julia, of Newtown, Pa. and three children.

RICHARD L. TRACY, '48

A prominent Worcester area citizen and devoted WPI alumnus, RICHARD L. TRACY, '48 passed away while jogging on Wachusett Street in Worcester on June 10, 1970. He was 45. He had suffered a heart ailment a few years ago and since returning to work had maintained an active physical fitness program. He was wearing his track uniform when found on the steps of his fraternity house, Phi Kappa Theta.

Born in Worcester on March 10, 1925, he attended Uxbridge, Mass. High School before entering WPI. He graduated with distinction in June, 1948 with a bachelor of science degree in civil engineering. As an undergraduate he was extremely active on campus. He was editor of the Tech News and a member of the Peddler staff, Masque, Tech Council, Newman Club, and Phi Kappa Theta. And he received many honors. He was selected for membership in Skull, Tau Beta Pi, Pi Delta Epsilon, and Who's Who and in later years in Chi Epsilon and Sigma Yi

He had been with Francis S. Harvey, '37, since his graduation and in 1962 they formed the partnership firm of Harvey & Tracy, consulting structural engineers. He was a registered engineer in Massachusetts and Rhode Island. He was a past officer of the Massachusetts Society of Professional Engineers, and a member of the National Society of Professional Engineers, and the American Society of Civil Engineers.

Dick had also served his Alumni Association actively. He had served the Worcester County Chapter in all its elective offices through the years, including president, and had been an alumni admissions counselor. At the time of his death he was vice president of the WPI Society of Families. He was also active in the Boy Scouts, his church, and the American Legion and was a veteran of Navy service as a Second-Class Petty Officer in the South Pacific during World War II.

He is survived by his widow, Winnifred (Gallagher) Tracy; a son, Thomas J., a junior civil engineering student at WPI; a daughter, Patricia Ann; and several aunts and uncles.

FREDERICK A. RAUPPIUS, '53

FREDERICK A. RAUPPIUS, '53, was killed on December 21, 1969 when the single engine plane he was flying from Nashua, N.H. to Newark, N.J. crashed in Woodbury, Conn. He was 38.

Born on August 16, 1931 in New York City, he attended Brooklyn Technical High School before entering WPI in 1949. He graduated in 1955 with a degree in chemical engineering. While at WPI he was a member of Phi Gamma Delta Fraternity.

Upon graduation, Mr. Rauppius joined the E. I. DuPont de Nemours Co., Inc. at Newburgh, N.Y. as a process engineer in research. He later joined Celanese Corp. of America as a business manager and later new products manager. At the time of his death he was a resident of Newark, N.J. and was vice president of Coin International, Inc., a plastics firm in New York and division of Coin Sales Corp., New York.

Survivors include his wife Mrs. Anne (McMillan) Rauppius, three sons and two daughters by a previous marriage.

ROBERT N. ELDREDGE, '54

ROBERT N. ELDREDGE, '54, passed away on March 22, 1970 in Miami, Florida after being admitted to a Miami hospital for surgery. He was 37.

Born on June 15, 1932 in Haverhill, Mass., Mr. Eldredge entered WPI in 1950 and graduated in 1954 with a BS degree in chemical engineering. While at WPI he was a member of Sigma Phi Epsilon Fraternity and Tau Beta Pi.

Mr. Eldredge joined the Esso Standard Oil Co., Bayonne, N.J. shortly after graduation from WPI but soon became affiliated with Creole Petroleum Corp. of Venezuela and had spent the last 15 years as a chemical engineer for that corporation.

Besides his widow, Phyllis Eldredge and his parents, he leaves two daughters, Karen and Christine, and a son, Douglas, all of Sebring, Florida.

BRUCE CONNELL, '64

BRUCE CONNELL, '64, died on April 16, 1970 at the University Hospital, Boston. He was 28.

A Natick, Mass. resident, he was born on February 28, 1942 and entered WPI in September, 1960. He graduated with a BS degree in electrical engineering. At the time of his death Mr. Connell was employed as a design engineer for Raytheon Corp., Bedford, Mass. He had served as a first lieutenant in the Army Signal Corps in Vietnam from November 1965 to December 1967. He was a member of the Meriden Lodge of Masons, Parker Royal Arch Chapter, Natick.

Survivors included his wife, Sheryl (Cookson) Connell, his mother of Natick and two brothers.

YOUR CLASS AND OTHERS



1908

The Class of 1908 is proud of our honorary member, ESTHER GODDARD, and extend congratulations to her as the recipient of an Honorary degree of Doctor of Science from Anna Maria College, Paxton, Mass.

The class may be weakening, but we're not done yet — as indicated by the attendance of HERB CARLETON, LEON HITCH-COCK and DON SIMONDS at the Annual Meeting of the Alumni Association.

Donald D. Simonds Secretary

1915

CHARLES B. HURD writes: "I'm busy keeping up the yard, collecting fossil shells, and fishing. I have presented a collection of fossil shells of southwest Florida to the South Florida Museum in Bradenton." Mr. Hurd lives in Anna Maria, Fla.

1918

BENJAMIN LUTHER has written to inform us that his wife, Antoinette, passed away unexpectedly on March 9, 1970. On April 17 of this year they would have celebrated their 50th wedding anniversary... RAYMOND H. SHAW reports that in 1969 he was elected to a third three-year term on the Board of Assessors for the city of Rutland, Vt. He retired in 1959 after 43 years' service with New England Telephone & Telegraph.

1920

LESTER C. WIGHTMAN is vice president for industrial engineering planning at Hoerner Waldorf Corp. in Keokuk, Iowa... BURTON W. MARSH, Executive Director of the Institute of Traffic Engineers, Washington, D.C., has received the Arthur Williams Gold Medal Memorial Award for 1970. The award was presented by the World Safety Research Institute, Inc.

1922

FRED PICKWICK, JR., writes: "I have retired from the Atomic Energy Commis-

sion and will continue to reside on the western slope of the Rockies (in Grand Junction, Colo.)"

1924

After 38 years' service with the State of New Hampshire Dept. of Public Works and Highways, ARTHUR P: MILLER has retired. At the time of his retirement, he was assistant highway design engineer.

1926

Members of the class who have retired recently are: ROBERT H. ALBERTI, who retired in July, 1969, as quality control manager at Greenfield (Mass.) Tap & Die Corp.; ELMER HANSEN, who retired from the Pennsylvania Power & Light Co.; CLYDE W. HUBBARD, who retired on Feb. 27, 1970, as senior hydraulic engineer at Stone & Webster Engineering Corp. in Boston; and EMERSON A. WIGGIN, who retired in May 1970, from Betterley Associates in Worcester...ARCHIE J. HORNE has recently formed a real estate appraising and consulting firm in Worcester. It is Horne & Hastings Associates and the other partner in the firm is Calvin V. Hastings, Mr. Horne's son-in-law. . . STANLEY R. OS-BORNE is vice president and a partner in the New Haven (Conn.) firm of Hubbard, Lawless & Osborne Associates.

1927

RICHARD K. IRONS holds the Harriman Chair of History at the Groton School, in Groton, Mass., and he reports that he will retire in 1972 after 39 years at Groton... CHARLES MacLENNAN is employed by Harza Engineering Co. which is a consulting engineering firm in Chicago...C. STURE CARLSON, who retired about a year ago from the Norton Co. of Worcester, has been appointed town engineer for the town of Northboro, Mass.

1928

FRANCIS H. KING is manager of the Municipal Gas and Electric Dept. for the city of Holyoke, Mass. He has held that position for the past 25 years. Last St. Patrick's Day, he was parade marshal for the annual St. Patrick's Day parade in Holyoke.

1929

FREDERICK G. BALDWIN retired on April 1, 1970, after 41 years with the Central Vermont Public Service Corp. For the majority of those 41 years he was located in St. Johnsbury, Vt., and he continues to be active in that community as vice president of St. Johnsbury Community Television (CATV)... ROBERT L. COT-TON is retired and is living in Jamaica, N.Y. He had previously been in Lisbon, Portugal, with Radio Free Europe... Another recent retiree is Prof. JOHN M. PETRIE, who retired from WPI in June. He was a professor of chemical engineering and is now a WPI professor emeritus. . . RICHARD J. STONE has retired from CF&I Steel Corp., Wickwire Spencer Steel Div., and he is now residing in Jaffrey, N.H... UNO A. MAT-SON recently celebrated his 40th anniversary of service with Bell Laboratories. He is a member of technical staff in the Microwave Equipment Dept. at the Merrimack Valley Laboratory in N. Andover, Mass.

1930

WALTER H. FRENCH writes: "(I) retired from the New York Telephone Co. in August, 1969. Still living in Syracuse. Enjoying life and the beauties of this wonderful country of ours"... Another member of the class who retired recently is ALBERT M. GOODNOW. He retired after spending nearly 30 years with the Boston Edison Co. He makes his home in Sudbury, Mass... The main engineering building at the University of Massachusetts in Amherst has been named Marston Hall in honor of GEORGE A. MARSTON, Prof. Marston was the first Dean of the UMass School of Engineering, being named to that position in 1947. He retired as Dean in 1963 and since then has been a professor of mechanical engineering at Western New England College in Springfield, Mass. He lives in Amherst. . . EDWARD R. DELANO has retired as highway superintendent of the California Div. of Highways, Red Bluff, Calif. An article about his recent trip appears elsewhere in this issue... HILTON FISHER has retired from the turbine dept. of the General Electric Co., W. Lynn, Mass.

1931

JUICHI KAKU, MS, is senior managing director of Origin Electric Co., Ltd. in Tokyo, Japan...RUSSELL J. LIBBEY writes: "On February 1, 1970, I retired from U.S. Steel Corp. I was staff engineer – appropriations and control for the eastern area." He is residing in Fairview Park, Ohio...OLIVER B. MERRILL continues as president of Kingston-Warren Companies in Newfields, N.H...Another New Hampshire resident is OLIVER R. UNDERHILL, JR. He is now residing in Franconia.

1932

Dr. WILLIAM E. HANSON, Chairman of the Board of Trustees of WPI, is now with Gulf Research & Development Co. in Pittsburgh. Pa. and his title is senior scientist-executive. Dr. Hanson was recently honored by being named honorary cadet colonel of the WPI ROTC brigade...JOHN H. PORTEUS is presently employed in Mexico as technical director for Painco-Rust, S.A...LEON D. SKUROPAT has written to inform us that: "I am no longer associated with the General Electric Co., having retired at the end of last year after 35 years of continuously challenging work in Brazil. A long series of successful assignments, culminating in top management positions, perhaps has not been as personally satisfying as the development of the local engineering talent during these years." He lives in Sao Paulo, Brazil and he says that any Tech men would be most welcome. . . CONSTANTINE G. ORFANOS reports that he is presently project manager, electric utility equipment projects, for the General Electric Co. in their export div. He and Mrs. Orfanos spent last September in Greece visiting members of his family and former business associates. Connie says that his oldest daughter will be among the first class of co-eds to graduate from Yale University in June, 1971... United Illuminating, Inc. of New Haven, Conn., employs EUGENE W. SOMERVILLE as vice president for engineering and planning. He was recently elected to the executive board of the Quinnipiac Council, Boy Scouts of America, in Hamden, Conn.

1933

GEORGE W. LYMAN is plant manager for Armstrong-Blum Mfg. Co., Spartan Saw Works, in Springfield, Mass. He lives in W. Suffield, Conn... Bell Telephone Labs in Whippany, N.J. employs WALTER W. TUTHILL as a member of their technical staff... FREDERICK M. POTTER is chief engineer of rotary equipment for the Bendix Electric Power Div. of the Bendix Co. in Eatontown, N.J.

1934

E. HUGH OSBORNE is an electrical engineer for the U.S. Air Force at Hanscom Field in Bedford, Mass.

1935

RAYMOND O. GRANGER, executive vice president and general manager of Granger Contracting Co., Inc. in Worcester, was recently elected a director of Home

Federal Savings and Loan Association in Worcester...WENDELL D. JEWELL reports that he and his wife plan to spend the next year or two traveling around the country in a motor home... GEORGE A. MAKELA is living in Alexandria, Va... Resistoflex Corp. in Roseland, N.J. employs GEORGE A. MITCHELL as quality and assurance manager. He was formerly with the Bendix Corp... WESLEY A. PROC-TOR, president of Stafford Iron Works in Worcester, now resides in Chatham, Mass... PHILIP S. DEAN is employed by Northeast Utilities Service Co. of Hartford, Conn. as a senior engineer. He resides in Meriden, Conn... LEONARD G. HUM-PHREY, JR. is manager of the federal & marine dept, of the Buffalo Forge Co. in Washington, D.C. "Hump" resides in Chevy Chase, Md... A California resident is LESTER L. LIBBY. He is self-employed as an electronics consultant in Los Altos Hills.

1936

ROGER W. BRUCE has been appointed general superintendent of the Worcester Works Div. of the U.S. Steel Corp.

1937

C. CHAPIN CUTLER, director of the Electronic Systems Research Laboratory at Bell Laboratories in Holmdel, N.J., has been elected a member of the National Academy of Engineering...FRANCIS H. MARCHAND is managing director of Gleeson Mortuary in Torrington, Conn...JOHN F. McGINNIS is vice president — production of the Camden, N.J. and Sioux City, Iowa Plants of the Kind and Knox Gelatin Co. He resides in Haddon Hgts., N.J.

1938

FREDERICK B. BANAN is employed by Citicorp Systems, Inc. of Cambridge, Mass. as a senior programming specialist... RAVINDRA L. KIRLOSKAR is chief executive officer for Kirloskar Electric Co., Ltd. in Bangalore, India...THOMAS E. O'NEIL is employed by Chemical Construction Corp. of New York City and he is presently located in India.

1939

WALTER L. ABEL is vice president for corporate systems and director of research for the United Shoe Machinery Corporation of Beverly, Mass. On Reunion Weekend, 1970, he received a Robert H. Goddard Award for outstanding professional achievement... Public Service Electric & Gas Co. employs HENRY S. BLAUVELT in their Electric Distribution Dept. as manager of methods... HARRISON K. BROWN is a member of the management task team at NASA's space station in Huntsville, Ala... OIVA J. KARNA is now located in Houston, Texas where he is a project manager in the process plants division of Foster Wheeler Corp. . . ARTHUR H. MALLON is a civil engineer in the division of applied sciences and technology of the Federal Water Pollution Control Administration. . . ROBERT J. HAMILTON is with Mobil Oil Corp. in New York City and is manager fleet sales.

1940

GEORGE S. BINGHAM reports: "I was appointed assistant administrator, engineering and construction (chief engineer) of the Bonneville Power Administration (in Portland, Oregon) on September 1, 1969. Residing in Lake Oswego, Ore. Have resumed skiing, plus hiking, swimming, etc. The Northwest is wonderful!"... MALCOLM S. BURTON has been named associate dean of the Cornell University College of Engineering on an interim basis. Mal is also assistant director of Cornell's Department of Materials Science and Engineer-

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The five alumni pictured above are all employed by the Earth Station Implementation Div. at COMSAT in Washington, D.C. Left to right: Robert J. Matthews, '48, L. Howard Reagan, '44, William D. Young, '50, Richard J. McBride, '56, and Brian J. Williams, '59.

ing...ROBERT W. HEWEY has been appointed vice president, manufacturing by Sprague Meter Co., Bridgeport, Conn... RUSSELL A. LOVELL, JR. has retired and is now living on Cape Cod in Sandwich, Mass.

1942

Singer-Link in Silver Spring, Md. employs WILBUR H. DAY as their manager of systems engineering...Sun Oil Co. in Philadelphia has named Dr. RAYMOND WYNKOOP director, corporate research department in their newly-created Corporate Projects Group...Fontaine Brothers, contractors, of Springfield, Mass. employ DONALD R. PACKARD as their director of development.

1943

RICHARD F. DYER is with Tennessee Eastman Co. in Kingsport, Tenn...Dr. CHARLES A. JENKINS, JR. is the base dental surgeon at the U.S. Air Force's Hurlburt Field, Fla. base...ROBERT P. SEATON is employed by the Allen-Bradley Co. in Upper Darby, Pa...HOWARD A. AUBERTIN is located in the Worcester area. He is employed by J. G. Lamotte & Son, Inc. of Worcester and he lives in Paxton.

1944

NORMAN S. BLODGETT is a patent attorney in Worcester... ANDREW KUR-KO owns and operates Kurko Plastics Co. in Huron, Ohio... JOHN W. LEBOURVEAU has been named manager of environmental research by the New England Electric System, Westboro, Mass... ARTHUR L. STOWE is associated with Colonial Investment Securities in Worcester.

1945

EDWIN G. BALDWIN is director of military projects for Western Electric Co., Inc. in Winston-Salem, N.C... Massachusetts Governor Sargent has appointed WILLIAM P. DENSMORE to the State Board of Education. Bill is a vice president of Norton Co. in Worcester and is general manager of the refractories and protective products division... ANSON C. FYLER, who received a Robert H. Goddard Award for outstanding professional achievement at the Reunion 1970 luncheon, is president of Arrow-Hart, Inc. in Hartford, Conn. . . Bell Telephone Labs in Holmdel, N.J. has announced that Dr. ERNEST R. KRETZMER has been promoted to director of the Data Communications Lab. . . ROBERT SCOTT, who is an employee of MFB Mutual Insurance Co. in Providence, R.I., is currently "on loan" as managing director to FM Insurance Co., Ltd. in London, England.

1946

BERNARD L. BEISECKER, JR. has been named vice president — manufacturing at Reed & Prince Mfg. Co. in Worcester... Heublein, Inc. has announced that WILLIAM G. DALY has been appointed distribution manager for their spirits and wine div... As reported in the Campus Notes section of the last issue of the Journal, Prof. WILLIAM R. GROGAN has been named Dean for Undergraduate Programs at WPI, effective in July, 1970... DOUGLAS S. MILLER is a senior engineer with Uniroyal, Inc.

1946B

THEODORE A. BALASKA is presently director of engineering and new product

development for the Bishop Mfg. Corp. in Cedar Grove, N.J... HAZEN L. HOYT, III reports that he is now in his 12th year with Xerox Corp. and that he is manager of the Xeromammography Engineering group in the Medical Diagnostics Operations which is based in Pasadena, Calif... CHARLES A. MITCHELL, JR. has been named Northeast regional manager of Westamerica Securities, Inc., a Denver-based securities firm... Westinghouse Electric Corp. employs DANIEL J. RICE in Baltimore, Md. as senior division marketing manager.

1946C

PHILIP G. DUFFY reports that after a year of fun in Vermont (he was with Fairbanks Morse in St. Johnsbury), he is now with the Foxboro Co., Foxboro, Mass. and he is living in Sharon, Mass.

1946D

ROBERT W. SCHRAMM is manager of engineering services at E. R. Squibb & Sons, Inc. in New Brunswick, N.J.

1947

General Electric Co. employs GUY H. NICHOLS in their Aircraft Engine Group in Evendale, Ohio as a reliability engineer... JACQUES L. METENIER is general manager of the Societe Des Condenseurs Delas in Paris, France.

1948

RICHARD A. SEAGRAVE is works manager for FMC Corp., Link Belt Div., in Indianapolis, Ind. . . The director of marketing at Avco Bay State Abrasives in Westboro, Mass. is ROBERT A. GREEN. He is responsible not only for all marketing and sales operations but also the supporting product engineering activities. He was formerly director of sales for the company. . . CHARLES A. WOODMAN has received a PhD degree in education from Boston University. Dr. Woodman has been a physics and general science teacher in the Wakefield, Mass. school system since 1960.

1949

The University of Hartford (Conn.) has promoted Prof. RICHARD W. BROWN to the rank of full professor. Prof. Brown is chairman of the electrical engineering department at the university... WALTER J. MUSSONI is a regional sales manager, fire protection products, for Bliss-Portland, located in S. Portland, Me. Walter recently represented WPI at the inauguration of the new president of Nasson College in Springvale, Me... ROBERT A. ROWSE is employed by Norton Co. in Worcester as

director of research and development in the Abrasives Div...JAMES D. WiLSON is an abrasives engineer with the United Tool & Industrial Supplies Co., Inc. in Lawrence, Mass...ROBERT R. SMITH is a sales engineer for Westinghouse Electric Corp. and is located in Eugene, Ore...DONALD H. STORY has been promoted to general manager of the Cambridge, Mass. Gas Co. division of the New England Gas & Electric System. He lives in Framingham, Mass.

1950

The director of the Bureau of Solid Wastes Disposal of the Massachusetts Department of Public Works is JOHN F. GALLAGHER. John lives in Worcester... Lt. Col. FRANK W. HARDING III is in the Air Force with the Space & Missile Systems Organization and is presently living in Garden Grove, Calif...ROBERT L. MOISON is a consulting chemical engineer with David R. Conkey & Associates in Minneapolis, Minn... General Electric Co. employs Dr. HERMAN A. NIED at their Knolls Atomic Power Lab in Schenectady, N.Y. He is an analytical mechanics engineer...Litton Industries. Inc. has announced that ROBERT F. STEWART has been promoted to be a Litton Corporate vice president and group executive heading the Machine Tool Systems Group. He is responsible for the worldwide operations of the group.

1951

Cmdr. RALPH W. AUERBACH, JR. is stationed at the U.S. Naval Public Works Center in Pensacola, Fla...A. WILLIAM SPENCER is employed by Eastman Kodak Co. in Rochester, N.Y. and he recently received a NASA award for his participation in the Apollo II space program...The University of Kentucky in Lexington has Dr. DONALD E. SANDS as a professor of chemistry. He spent the first half of 1970 on sabbatical at the University of Florida.

1952

Hamilton Standard in Windsor Locks, Conn. has promoted ROBERT E. SULLI-VAN from chief product engineer to chief of quality control in the electronics dept.

1953

Dr. ROBERT W. FITZGERALD has been promoted to associate professor of civil engineering at WPI...JOHN S.

LOVELL is employed by Hamilton Standard in Windsor Locks, Conn. in their space systems dept. and is chief of advanced engineering...DONALD S. OLIVER is manager of the Physics Laboratory at Itek Corporation's Lexington (Mass.) Research Laboratories. He was recently awarded a patent for his invention of a method to measure the vibrations of a vibrating object...The Fort Madison, Iowa plant of E. I. duPont deNemours & Co., Inc., has JOHN E. LEACH as assistant plant manager.

1954

WILLIAM SCHOENEMANN is manufacturing manager for Microform Data Systems and he resides in Sunnyvale, Calif...EDWIN J. SHIVELL III has been nominated for a three year term as an alumni trustee of Monson Academy, Monson, Mass.

1955

JOHN W. CNOSSEN has accepted a position in the Uxbridge, Mass. school system as a high school teacher of chemistry and physics. Since 1963 he has been proprietor of his family's restaurant in Uxbridge.



ENGINEERING INGENUITY

key to industrial progress

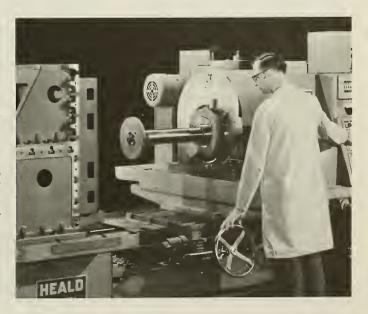
Design a machine that grinds the "nonrotatables" . . . seem impossible? Not when Heald engineering ingenuity is used. The new Planetary Model 5650 precision grinds parts that are too big, too heavy, and too awkward to rotate.

Instead of rotating the workpiece, it rotates the wheelhead in orbit around the centerline of the surface to be ground. And the wheel feeds into the work simply by changing the orbital radius.

The Model 5650 grinds I.D.'s, O.D.'s and faces on workpieces of practically any size, shape or weight. This versatile machine can be equipped to grind bores from 1¼" to 14½" in diameter, with maximum hole lengths up to 34" depending on bore diameter. When it comes to engineering ingenuity it pays to come to Heald, where metalworking needs meet new ideas.

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1956

JOHN M. NASH is production superintendent for the Koppers Co., Inc. in Chicago, III... JOSEPH F. PAPARELLA is employed by the Foxboro Co., Foxboro, Mass. and he is manager of the corporate legal dept... ARNOLD M. HALL is vice president — engineering and research for Transportation Technology, Inc. in Dallas, Texas. He resides in Irving, Texas.

1957

ROBIN AW is an engineering trainee at Presmet Corp. in Worcester...JAMES A. CHENEY has left the Union Carbide Corp. and has joined his brother in Cheney Design Engineering Co., Inc. in Fitchburg, Mass. The company specializes in materials handling and packaging engineering. . . Western Electric Co. employs FRED H. CLARK, JR., as a senior engineer. Fred resides in Atkinson, N.H... Dr. ROBERT K. CRANE is an engineer at MIT's Lincoln Labs in Lexington, Mass... System Development Corp. in Paramus, N.J. has KENNETH E. HERMANCE as a computer system specialist... The computer control division of Honeywell, Inc. employs JOHN M. HOBAN in Forest Hills, N.Y. as an account representative...CARL L. URETSKY is chief applications engineer for Transitron Electronic Sales Corp. in Wakefield, Mass... Esso Research & Engineering Co. in Linden, N.J. has named RALPH P. SCHLENKER to a position as section head in the technology dept.

1958

Polaroid Corp., Cambridge, Mass. employs WILLIAM S. BROWER, JR., as a senior manufacturing engineer... MAGNUS J. EINARSON is president of Circuit Lab in Woburn, Mass... An employee of General Electric Co. is WILLIAM F. GESS. He is located in Syracuse, N.Y. and is a senior engineer in advance sonar development engineering - heavy military electronic systems...ROGER A. LITMAN is operations manager for the Transitron Electronic Corp. in E. Boston, Mass... RICHARD A. PRATT is a chemist in the Roytype Div. of Litton Industries in W. Hartford, Conn. . . Battelle Memorial Institute in Columbus, Ohio employs HOWARD B. PRITZ as a research engineer... Employed by Jamesbury Corp. of Worcester since his graduation from WPI, JOAOUIM S. S. RIBEIRO is now controller... DONALD ABRAHAM is an electronic engineer at the U.S. Navy Underwater Sound Lab in New London, Conn... The U.S. Navy's Underwater Sound Lab in New London, Conn. employs WILLIAM E. MULLARKEY... ELMER W. SCHRADER, JR. has recently

joined the Knolls Atomic Power Laboratory of the General Electric Co. in Schenectady, N.Y. as a reactor systems engineer... JOHN B. VESEY reports that he is a sheet metal worker for Stanford Electronic Metals Inc. in Farmingdale, N.J.

1959

DAVID R. BRAGG is a project manager for Cahn Engineers, Inc. in New Haven, Conn... Father HARVEY D. EGAN is presently a PhD candidate at the University of Munster in Germany...F. BERNARD LALLY, JR. is a physics teacher in the public school system in Chicopee, Mass... SKF Industries, Inc., in Asheville, N.C. employs WILLIAM U. PURSELL, JR. as an engineering manager...BURTON SIEGAL, SIM, is a product engineer for Coated Products in Lowell, Mass... WINTHROP M. WASSENAR is assistant director of the physical plant at Williams College, Williamstown, Mass. He was recently elected to the elementary school committee in that town...Army Major JOEL T. CALLAHAN has received the Bronze Star for outstanding service during military operations in Vietnam. He is currently a deputy district engineer for the U.S. Army Corps of Engineers and is stationed in Wilmington, N.C. . . Dr. JAMES S. TYLER, JR., who holds a PhD degree from Yale University, is a senior research engineer with Systems Control, Inc. of Palo Alto. Calif.

1960

Navy Lt. Cmdr. KEVIN J. BURKE is stationed aboard the USS Hammerberg... Bethlehem Steel Corp. employs JERRY B. GIBBS as an engineer in their Homer Research Labs in Bethlehem, Pa...NORMAN B. MACK is president of Sack Storage Corp. in Worcester. He resides in Lynbrook, N.Y... We have learned that JOHN T. MANCHESTER is a senior engineering administrator in the Digital Systems Div. of the Foxboro Co., Foxboro, Mass...PAUL B. STEWART reports: "I have recently been promoted to engineer-in-charge of the Buffalo (N.Y.) office of the Factory Insurance Association. My wife Linda and I now have four children, aged 9, 7, 5, and 1."... Air Force Capt. WALTER WAJDA is presently stationed at Vandenberg AFB, Calif. . . ROBERT F. KASPROW is an assistant project design engineer for Pratt & Whitney Aircraft in E. Hartford, Conn.

1961

Married: JOHN A. OUAGLIAROLI to Miss Judith S. Fowler on November 15, 1969 in Syracuse, N.Y. John is a marketing representative for IBM Corp. in Syracuse... HENRY P. ALLESSIO to Miss Judith P. Sweet on May 29, 1970 in Pittsfield, Mass. Hank is an associate with William E. Hill Co. in New York City. The couple is residing in Pelham Manor, N.Y.

Worcester County National Bank reports that NICHOLAS A. CAPUTO has been appointed as their chief engineer... RICHARD D. COHEN is a stock broker with Legg & Co. in Baltimore... We have learned that International Boiler Works of E. Stroudsburg, Pa. employs EDWARD R. DESPLAINES as a mechanical engineer... ALFRED L. DUNKLEE is an electronic engineer with Ball Brothers Research Corp. in Boulder, Colo. . . RCA Corp. in Marlboro, Mass. has RICHARD H. FEDERICO as a senior member of their technical staff... Seattle, Wash. is the location of Lt. Cmdr. C. WILLIAM HAYES. He is with the U.S. Coast & Geodetic Survey in the Environmental Science Services Administration. . . ROBERT F. SCHUESSLER is plant manager for Topflight Corp. in York, Pa... DAVID G. REGAMEY is self-employed as an art dealer and restorer. He is located in Stow, Mass. . . Clipper Marine Corp., New York City, employs LAWRENCE A. STAATS as a second assistant engineer... Aetna Life & Casualty Co. has informed us that FREDERIC A. STEVENS has been named manager, CDP-Consulting, in the corporate data processing department... CALVIN E. BACKSTROM is employed by the Penn Yan (N.Y.) Municipal Board as Utilities Manager... Rutland, Vt. is the location of RICHARD Y, YEE, He is a project engineer for the Howe Richardson Scale Co... Dr. H. RICHARD FREEMAN received his PhD degree from the University of Maryland in June 1970. He is employed as an aerospace technologist at the Goddard Space Flight Center in Greenbelt, Md. He lives in Silver Spring, Md...JOHN V. RIDICK has been promoted to the rank of Major in the U.S. Army. He is assigned to the SATCOM Agency at Fort Monmouth, N.J. as an electronics engineer in the test and evaluation directorate.

1962

Married: CARMINE A. CAROSELLA to Miss Judy Perrone of Key West, Fla. in May, 1969. Carmine is a physicist at the U.S. Naval Research Lab in Washington, D.C. He resides in Arlington, Va.

Born: To Mr. & Mrs. NICHOLAS COT-SIDAS, a son, Peter Nicholas, on March 11, 1970. Nicholas is a member of the controller's staff of Squibb Beech-Nut, Inc. in New York City.

THOMAS H. MORRILL is attending Brandeis Univ. in Waltham, Mass. and is an assistant professor of physics at Emmanuel College in Boston...HAROLD C. REY- NOLDS is located in Connecticut and is an assistant project engineer at Pratt & Whitney Aircraft in E. Hartford. . . General Atronics Corp., Philadelphia, Pa., employs PETER A. PARRINO as a senior engineer. . . THOMAS E. QUINN is an associate sanitary engineer with the N.Y. State Health Dept. in Albany and is involved with industrial water pollution control... Dr. ERIC J. SELLEVOLD, who received his PhD degree from Stanford Univ. last year, is now located at Denmark Technical University in Copenhagen... MYRON R. WALDMAN is president of Walco Mfg. Corp. in Providence, R.I... ROBERT H. YORK is a graduate student at the University of California at Berkeley. . . ANDREW D. TERWILLEGER is a traffic operations engineer for the City of Hartford, Conn.

1963

Born: To Mr. & Mrs. GEORGE B. HUNT, a son, Errol Kevin, on March 4, 1970. George is an assistant civil engineer for the New York State Dept. of Public Works and is located in Poughkeepsie.

THOMAS E. CHECHILE is a structural civil design engineer with Northeast Engineers, Div. of Cives Corp. in W. Springfield, Mass... FREDERIC J. JACOBY is a senior electronic engineer with ARINC Research Corp. in Annapolis, Md...GEORGE P. ("Spider") VITTAS is manager, airport planning for American Airlines, Inc. and is located in New York City. His work encompasses the entire system of metropolitan, regional, and resort area airports served by American... HENRY A. DOW-GIELEWICZ, JR. is chief cost engineer for Stone & Webster Engineering Corp. at the North Anna Power Station, Mineral, Va. . . GERALD D. WAXMAN is a graduate student at the University of California, Los Angeles (UCLA)... Industrial Nucleonics Corp. of Columbus, Ohio has announced the promotion of WILLIAM C. ZINNO to production superintendent. In his new position, Bill is fully responsible for the company's electronic, mechanical and system assemblies, and for test operations.

1964

Married: RONALD E. LUBOWICZ to Miss Susan Kae Pore in New York City on January 24, 1970. Ron is a technical services manager for Koch Engineering Corp. in New York City.

ANTHONY CROCE received an MS degree in Systems Management from Florida Institute of Technology in September, 1969. Tony is presently employed as a project engineer in the Aircraft Weapons Systems Labs at the Rock Island, III. Arsenal. He resides in Davenport, Iowa...

STEPHEN A. HARVEY is with Bell Telephone Labs in N. Andover, Mass. . . BRUCE W. LARSEN is with New England Tel. & Tel. in Manchester, N.H. He resides in Peterborough, N.H... WALTER W. MAS-SIE is a civil engineering instructor at Oregon State University in Corvallis. . . New England Tel. & Tel. employs DAVID J. USHER in Portland, Maine as a construction manager... Air Force 1/Lt. PAUL B. WATSON is stationed at Dover AFB. dela... ROBERT H. MORSE is a vice president - sales engineering at Morse Brothers Electric Co., Inc. in Worcester. . . ROBERT W. RUDD is an engineer in the copier div. of Pitnev-Bowes, Inc. in Norwalk, Conn... RALPH F. BEDFORD has retired from the U.S. Army because of wounds received while on military duty in Vietnam. He was a Captain at the time of his retirement. He is planning to return to college to get a master's degree and a teaching certificate... THOMAS B. NEWMAN, JR., who received an MS degree from Northeastern University in 1969, is a reliability manager in the SAM-D program at the Raytheon Co. in Bedford, Mass.

1965

Married: KENNETH J. HULTGREN to Miss Carol Ann Hill of Gardner, Mass. on February 21, 1970. Ken is employed by the General Electric Co. in Fitchburg, Mass.

Navy Lt. j.g. LEO R. BERENDES is an electronics material officer aboard the USS Newman K. Perry...RICHARD BROWN is a research engineer at the Naval Underwater Weapons Research & Engineering Station, Newport, R.I. . . RICHARD J. CAVALLARO reports that he has been managing a wholesale florist business in Boston since 1968. . . Fort Sam Houston, Texas is the location of LEE A. CHOUI-NARD...Other members of the class who "are on military duty are: Army Capt. DAVID A. COOMBE, stationed at Redstone Arsenal, Ala.; Air Force Capt. MORDECAL GUTMAN, who is an instructor navigator on B-52's operating out of Guam on missions to Southeast Asia; and Air Force Capt. ROBERT H. JACOBY... Metcalf & Eddy in Boston employs KENNETH E. JOHNSON as a sanitary water supply engineer... BENNETT E. GORDON, JR. is an instructor in the mechanical engineering department at WPI...Camp, Dresser & McKee in Boston employs JOHN J. JOSTI.

JAMES S. MAIN is a graduate student and instructor at the University of Maryland, College Park, Md... Standard Oil of N.J. has LAWRENCE D. PHILLIPS as a district engineer. Larry lives in Akron, Ohio... HOWARD SHERRY is a PhD candidate at the University of Pennsylvania in Philadelphia... ROBERT H. CAHILL is a graduate student in the Wharton School at

the University of Pennsylvania in Philadelphia... MICHAEL S. DEMBSKI is an industrial engineer with the Continental Can Co. and he is located in Clarksburg, W. Va...WILLIAM D. GALEBACH reports that he is employed by Motorola Communications & Electronics, Inc. and that he is on a training assignment in Chicago, prior to becoming an area systems engineer for the company in the Atlanta, Ga. area... Sperry Systems Management Div. of the Sperry Rand Corp. employs CARL S. HAN-SON as a field engineer in Great Neck, N.Y... RICHARD S. OLSON is assistant director - urban development for Boise Cascade Corp. in Washington, D.C... E. H. Research Laboratories, Inc., in Mountain View, Calif. employs WAYNE D. POB-ZEZNIK as a sales engineer. . . Ramchargers Racing Engines, Inc., in Taylor, Mich. is owned and managed by RICHARD G. SKOGLUND... RICHARD C. MOORE is a physics and chemistry teacher at Timberlane Regional High School in Atkinson, N.H.

1966

Married: GEORGE M. ELKO to Miss Marie Scarpato of North Bergen, N.J. on April 11, 1970. George is working toward a PhD degree at Stevens Institute of Technology, Hoboken, N.J. . . ROY B. WARFIELD to Miss Donna Elizabeth Wolfe of Westfield, Mass. on February 28, 1970. Roy is an engineer with Pratt & Whitney Aircraft in E. Hartford, Conn.

Born: To Mr. and Mrs. DONALD H. FOLEY, a daughter, Heather Lynn, born on February 26, 1970. Don is working on a PhD degree and is a research engineer for RADC, Rome Air Development Center, Rome, N.Y.

PHILIP S. BLACKMAN is an operations analyst for the Federal Reserve Bank of Boston... ROBERT J. COATES is a manufacturing engineer in the Excelsior Div. of The Torrington Co., Torrington, Conn... GEORGE E. GRIMMELL is a roll and bearing engineer for the Bethlehem Steel Corp. at their Burns Harbor Plant, Chesterton, Indiana...JOHN KOPCHIK, JR., is a 1/Lt. in the U.S. Army...ROBERT A. LISAUSKAS has received an MS degree from WPI and is presently a candidate for a PhD degree, also at WPI...Another PhD candidate is ROBERT J. SCALZI. He is at the University of New Hampshire in Durham...Standard Oil of N.J. employs ROBERT A. SINUC as a project engineer in Florham Park, N.J... DAVID A. TORONE is a field engineer for the Philadelphia (Pa.) Electric Co. Dave lives in Springfield, Pa. . . RUSSELL W. EDMANDS is a chemical engineer with Air Products & Chemicals, Inc., in Allentown, Pa... General Electric Co. employs RICHARD B. NELSON in Schenectady, N.Y. as a steam turbine specialist... Navy Lt. JOHN B. TATA is a navigation instructor at the U.S. Naval Academy, Annapolis, Md. He recently returned from a tour of duty in Vietnam... WILLIAM F. ELLIOTT, assistant director of admissions at WPI for the past four years, has accepted a position as associate director of admissions at Carnegie-Mellon University in Pittsburgh, Pa.

1967

Married: Army 2/Lt. PETER J. DICKERSON to Miss Ann Loufus of Lunenburg, Mass. in a military wedding at Fort Hood, Texas on April 25, 1970...Army Capt. DAVID K. HEEBNER to Miss Bonnie V. Taylor of Oakham, Mass. in Worcester, Mass. on May 10, 1970. Dave is now stationed in Vietnam.

JOSE R. ALONSO, MS, is a demonstrator in the Department of Industrial Science at the University of Melbourne. Victoria, Australia...STEPHEN R: AL-PERT reports: "I just have to finish my dissertation for my PhD degree in Mathematics at Lehigh Univ. I am presently a 'full-time' teaching assistant and am teaching probability and, of all things, assisting in basic astronomy."... Avco's Bay State Abrasives Div. in Westboro, Mass. reports that CHARLES T. BLANCHARD is employed by them as a project engineer... EDWARD S. CIARPELLA is a teacher in the Tiverton (R.I.) School system. He has received a National Science Foundation Grant to study for an advanced degree in mathematics and will enter Illinois Institute of Technology in Chicago in September... DAVID R. COLLETTE has received an MBA degree from American International College in Springfield, Mass. Dave is a project engineer for Monsanto Chemical Co. Springfield, Mass.... JOHN KUENZLER is now residing in Elk Grove, III... Bethlehem Steel Corp. employs JAMES W. MANNING in Lackawana, N.Y. as a turn foreman. . . FRANK D. MANTER has completed a tour of duty in Vietnam, has been discharged from the service, and expects to work in Boston, ... Wisconsin is the location of WILLIAM O. MESSER, He is in Milwaukee where he is employed by Hercules, Inc. and is a technical representative. . . Navy Lt. j.g. PAUL G. TRUDEL is presently stationed in Bainbridge, Del... ROBERT D. WATKINS is assistant plant engineer at New England High Carbon Wire Corp. in Millbury, Mass... GREGORY J. GOULET is a reliability engineer with Viatron Computer Service, Inc., in Bedford, Mass...MARSHALL A. KAPLAN has joined the Peace Corps and is located in India... Navy Ens. GREGORY R. BLACK-BURN is stationed in the Philippines.

1968

Born: To Mr. and Mrs. DAVID A.

SWERCEWSKI, a daughter, Katherine, on July 11, 1969.

JOHN P. GAHAGAN is a teacher in the school system in St. John, New Brunswick. He teaches at Milledgeville North High School... Lincoln Electric in Cleveland. Ohio has JOSEPH C. NAPPI as an engineer...BRUCE A. TUPPER is working in Whippany, N.J. where he is a member, technical staff at Bell Telephone Labs... ROBERT D. WOOG is plant manager for American Telephone & Telegraph Co. in Newark, N.J. . . ROBERT C. GOSLING has received an MS degree from WPI and has accepted a position with Public Service Co. of New Hampshire and is located in Manchester. . . Three members of the class who are in the service are: Army 1/Lt. ERIC K. DURLING, who has completed a tour of duty in Thailand and is now stationed in Germany; Army 1/Lt. DAVID J. GUM-BLEY, who is in Vietnam with a construction battalion; and Air Force 2/Lt. THOMAS J. PERARO, who is a pilot trainee at Laughlin AFB, Texas... GREGORY T. SOVAS will enter graduate school at the University of Massachusetts in September. . . THEODOR A. HEIDT, JR., is a district engineer with the Torrington Co. and he is located in Milwaukee, Wisc... Dow Chemical Co. employs BRUCE G. LOVELACE in Midland, Mich. in their Midland Div. styrene section. . . PETER C. STANLEY is an engineer-in-training with the Boston Edison Co. in Boston, Mass... EDWARD M. ZAKREZEWSKI is employed by Cincinnati Milacron in Cincinnati, Ohio as a design engineer in their research and development dept... Army 1/Lt. IVAN V. BEGGS is stationed in New Olm, Germany...Army Lt. DANIEL C. CREAMER is a guided missile maintenance officer... Also in the Armed Forces are: Army Major RODNEY W. LOGAN, MS, who is a communications electronics specialist stationed in Washington, D.C.; and Army Sgt. JAMES M. PERKINS, who is an infantryman.

1969

Married: MICHAEL J. SCELZO to Miss Cheryl Janis DiPanfilo of Woburn, Mass. on February 14, 1970. Mike is a chemical engineer with Purex Corp. in Wilmington, Calif.

Army Pfc. RICHARD C. CARLSON is currently stationed in Korea... RONALD J. DROZDICK is an associate engineer with Atlantic Richfield in Houston, Texas... ERIC H. NICKERSON is a mechanical engineer with the Burndy Corp. in Norwalk, Conn... General Electric Co. employs ROBERT L. STESSEL in W. Lynn, Mass. as a service engineer... B. LEE TUTTLE is a graduata teaching assistant at Penn State in the Collega of Earth & Minaral Sciences... Also a graduate teaching assistant is DAVID

A. ZLOTEK. He is at WPI in the EE dept. and is working toward an MS degree... JAMES W. FOLEY is a student at Case Western Reserve University in Cleveland. Ohio... Humble Oil & Refining Co. employs PETER T. GROSCH in King of Prussia, Pa... MICHAEL W. NOGA is a technical engineering representative with The Trane Co. in Brighton, Mass. He lives in Waltham, ... WARREN L. ANDERSON has been commissioned a second Lieutenant in the U.S. Air Force and is stationed in Texas. . . Westinghouse Electric Co. employs Z. RONALD STELMAK in Pittsburgh, Pa. as a sales engineer... Army Lt. HENRY S. SWEET is stationed at Fort Bliss, Texas.

1970

Placement Office statistics released in June indicated that for the 293 members of the class 121 people had accepted employment; 57 would attend graduate school; 27 would enter the service; 2 had accepted teaching positions; 2 would enter the Peace Corps; 37 were undecided; and 47 failed to answer the questionnaire. For those accepting employment, the average salary was \$831 per month, or \$9972 annually.

Some of the members of the class who will be attending graduate school are: ROBERT BRENNAN, ROGER HENZE, and JAMES SMALL (Cornell); DAVID QUAGLINI, JR., ALAN KOLACZKOWSKI, and HENRY BLOCK (Penn State); LARRY VALLEE, PETER LALOR, FRANCIS VERNILE, TONY TOSCANO, BILL DUDZIK, BOB GRILLO, and PHILIP RADER (Univ. of Conn.); and JOHN BOYD, PAUL PERRON, FRANK POPE, PAUL WILSON, STEVE CROSBY, and DICK SCHWARTZ (WPI).

Some of the members of the class who have accepted employment are: ED MASON (Bee Plastics, Shrewsbury, Mass.); DAVID HENDRICKSON and DONALD RAPP (E.I. duPont de Nemours & Co., Inc.); BRUCE SAMUELSON (Buffalo Forge Co.); RANDY SABLICH (Grumman, Bethpage, N. Y.): RALPH DI IORIO (AT&T, White Plains, N.Y.); ROGER ETHERINGTON (Dow Chem., Freeport, Tex.); BILL HILLNER (Trane Co., Lacrosse, Wisc.); KAL NGOON and JIM FORD (State Mutual, Worcester); JOHN PELLI (Phi Gamma Delta Fraternity, Washington, D.C.); LEON SCRUTON (Clairol, Stamford, Conn.); STU NICKER-SON (Proctor & Gamble, Quincy, Mass.); BILL HAKKINEN (Chas. Pfizer Co., Inc., Groton, Conn.); CLARK KNICKER-BOCKER (Hooker Chemical, Niagara Falls, N.Y.); FRED THUMM (Stata of Conn. Transportation Dept., Wethersfield, Conn.); TOM HEINOLD (Heald Machine, Worcester); GREG BACKSTROM (Xerox Corp., Rochester, N.Y.); OLIVER BRIGGS (Koppers, Baltimore).

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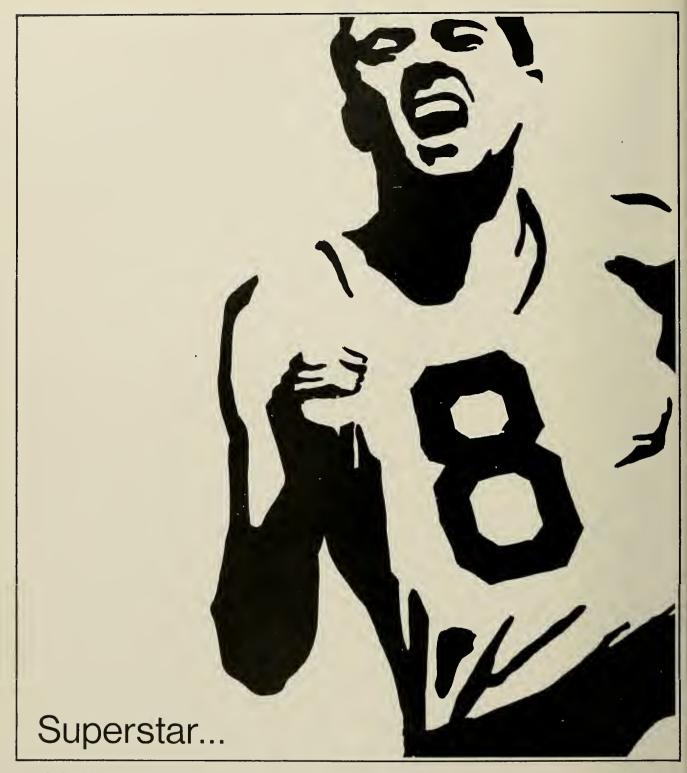
FROM NORTON

AN ARTIFICIAL ARTERY FOR HEART-LUNG MACHINES.



The COLUMNIC INSTITUTE





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the journal

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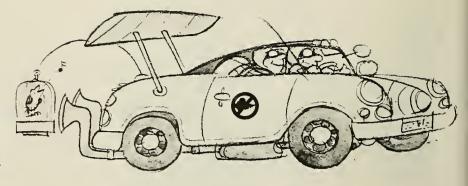
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WPI's Clean Machines

by Roger N. Perry, Jr., '45
Director of Public Relations



When the first place awards were presented at the conclusion of the 1970 Clean Air Car Race, teams from Worcester Polytechnic Institute were the winners in two of the three divisions of competition they entered. They had also won two lesser awards. They were the only two-division winners in the race. Was it just luck? Hardly. What, then, does it take to produce multiple winners in competition with 42 teams from 36 of the nation's leading colleges?

In addition to five teams of highly competent students, the most important single ingredient was cooperation... cooperation on the part of literally hundreds of people who became so interested in the project that they wanted to do all they could to help produce a winner. Of almost equal importance was a keen spirit of cooperation.

At WPI, the preparation of five entries for the race was undertaken as an educational project. It had the full support of the college in terms of faculty advisors, fund raising, logistic support and public relations. To those of us who were intimately associated with the project, anything less than an all-out supportive effort would have fallen far short of the standards set by the students themselves, many of whom worked 18 to 20 hours a day throughout the late spring and summer, to complete their entries.

Academic credit for the work as part of a projects course was available to the students. Most, however, became involved in the spirit of challenge and adventure. They found plenty of both.

The project actually began last December when a news release was received from MIT announcing plans for the race. The Mechanical Engineering Dept. set up a meeting for any students interested in the race project. Prof. Roger R. Borden expected about a dozen at the meeting but instead, there were about 60 students. They quickly organized into teams, each with a different design approach.

By spring, the design work for five different vehicles was completed and the work of building began. This was when the problems began and this, too, was when education became unconventional but thoroughly rewarding. It was learning through doing and called for real engineering involvement. When the design called for a pump to provide 1500 psi pressure for the feedwater system on the steamer, for example, the team had to find out who made such a

pump, what the delivery schedule was, and what it cost. They learned about ordering, delayed freight shipments, and about the time it takes to turn ideas into hardware.

Allen Downs, '71, of Needham, Mass., captain of the "WPI Great Teakettle" team, commented, "Professor Zwiep told us very early in the project that whenever we estimated what something would cost or how long it would take, we should multiply it by five. You know, he was right on the button."

When the designs were ready, it was apparent that it would take a lot of money to put five cars on the starting line. Here the teams had the support of the University Relations Dept. Douglas McKeown, with his many industrial contacts, helped the teams prepare letters to business firms requesting specific pieces of equipment or financial support. His telephone was also used heavily in making some of the business contacts. He came back to his office one day to find three students calling Paris, France, in an unsuccessful effort to track down a gas turbine suitable for automotive use.

The overall price tag on the project eventually reached about \$80,000. Most of this was for cars and equipment and the rest represented the expenses of participating in the race itself. Over 60 industrial firms contributed equipment and funds toward the project. Hundreds of alumni sent in checks to help as did students, parents, faculty, and staff. At race time, the project was just about breaking even financially. Winning two first place awards brought WPI two \$5000 grants for continued research on the project from the National Air Pollution Control Administration. They also called to say they would help the WPI steam team in the same way. However, there are still some race expenses to be covered, according to Prof. Donald N. Zwiep, Head of the Mechanical Engineering Dept. and overall coordinator of the race project.

Although many firms declined the opportunity to participate and some just never bothered to answer the letters, there were enough companies who did accept the invitation to have a part in the race to assure the teams that they would have the equipment needed. In a time when college students are reported to be avoiding careers in business because they consider big business too impersonal and concerned only with money, the clean air car teams

found just the opposite. They found managers and engineers willing to go to great lengths to help them. The General Electric Industry Control Dept. in Salem, Va., for example, contributed the controls for the WPI Electric Hybrid vehicle and then sent two engineers to Worcester for two days to check them out after installation.

The first clean air car to become operational was propane powered. Starting with a donated 1964 Chevelle, the team prepared a prototype of its eventual entry by installing an American Bosch conversion system to burn propane gas. Much of the early publicity about the race featured this particular car since it was one of the first completed by any college.

As the project progressed, the thoughts of driving an older used car in the race became a matter of concern. Suppose a wheel bearing or a grease seal failed from old age and put the car out of the race? It wasn't worth the risk so the original "WPI Natural Gasser" was replaced by a 1970 Nova dubbed the "WPI Propane Gasser". However, the original gasser continued to operate as a utility vehicle, providing additional publicity as it was driven around town. The new gasser went on to win its division of competition. It was also judged the cleanest car in the race, amassing the highest number of points of all cars in the race.

The second car to become operational was the "WPI Clean Air SAAB". This entry used unleaded gasoline in a SAAB 99E equipped with a computer-controlled fuel injection system. The car, the cost of conversion and much of the technical assistance for this entry were contributed by SAAB of America. In addition to the use of experimental pistons and camshaft, the SAAB was also equipped with Englehard catalytic converters to minimize hydro-



Drawn by Hampton Falls, N.H., artist Mark E. Kelley, the cartoon at the top of page 2 was used in a series of brochures issued by WPI describing the cars.

carbon emissions. This team included the only girl on the WPI roster, Miss Nancy Wood of Gardner, Mass., who was one of only four women drivers in the entire race. Nancy is a WPI coed in the sophomore class majoring in mechanical engineering.

The "WPI Dark Horse" was so named because it was developed off campus in New Jersey at the research center of a major oil company which preferred to remain anonymous. They arranged for the Ford Mustang car and gave complete support for converting it into a fuel injection entry using regular leaded gasoline. Everything not necessary for the car's operation was removed to save weight. This included windows, carpeting, the trunk lid, and even the regular seats which were replaced with others which were lighter and purely functional. The anonymity was broken after the race when Mobil World featured a full front page picture of team captain Walter Thompson, '71, of Mt. Vernon, N.H., with the Dark Horse in front of Mobil's New York headquarters. An inside page picture of the car included Mobil engineer Bill Mears, WPI '53, who was the principal advisor to the team.

Meanwhile, back at the Higgins Laboratories, the "WPI Great Teakettle" and the "WPI Hybrid-Electric Vehicle" were being built side by side in the Clean Air Car Lab (normally known as the Strength Lab). Throughout the summer, lights burned until 2 or 3 a.m. and sometimes all night as these two teams raced against a rapidly approaching deadline to complete the two most complex of the WPI entries. Each team had to develop its power unit and control system rather than modify existing equipment. For the Hybrid team, it meant adapting industrial electrical motors and controls to automotive use. This car was

Left — Working on the WPI Clean Air SAAB, from left, team captain Robert Guertin, Nancy Wood, John Luikey, and Tom Mirarchi.

Below — Christening the Great Teakettle with a can of golden brew are, left, Tom Werb, and John Pratt.



plagued by overheating problems both during construction and in the race itself but the team managed to overcome each problem in turn. During the race, they added an "air conditioner" to cool the control system. It was made from a plastic picnic cooler which used dry ice to cool air coming in through flexible ducts before it was directed to the troublesome hot spots. There wasn't enough cool air, however, to keep a plastic flashlight from melting into a gooey mess on the car floor when it went through the 120 degree heat of the southwestern desert. In spite of the heat problems, they became the second WPI first place winner.

"The Great Teakettle" power plant had to be built by hand almost in its entirety. Steam components for automotive use just aren't made. The team followed plans developed by R. J. Smith Automotive Steam Systems of Midway City, Calif. They built their own steam generator from sheet metal and tubing. The engine was converted to a uniflow steam engine from a six cylinder Mercury outboard engine. Valves, controls and all other parts had to be located or improvised, checked out and then installed. In spite of working 18 to 20 hours a day, the steam team wasn't able to try the car under its own steam until only three days before the race was to begin. Speed on that first run was a disappointing ten miles an hour. In the next three days, up to one hour before the race, they managed to achieve 30 miles an hour which still wasn't enough to make it practical to try the 3600 mile run. Since it was the only one of four steam cars originally entered in the race which was capable of running under steam power by race time, the race committee requested that the "Great Teakettle" make a symbolic start across the line even though it only went around the first turn where a WPI car took it in tow for the return trip to the campus.

No account of the race would be complete without a word of commendation for the Clean Air Car Race Committee for a magnificent job of organizing the project and providing the logistic support for about 300 people during the cross country, week-long drive. The committee of students from MIT and Caltech was headed by MIT graduate student Robert McGregor. His group devised the race rules, planned the route, made arrangements for housing and feeding enroute, assigned observers to each race vehicle, and effectively managed every aspect of the entire race from planning through to the final reports. WPI enjoyed the complete cooperation of the committee throughout the project.

Also deserving of special mention were the WPI technicians who helped in building the cars. M.E. Dept. machinists John Grzyb and Bob Taylor were involved in the project throughout the late spring and all summer. They also went to California as part of the support team to help with any mechanical troubles. John became a "godfather" to the men who used his shop all summer. He occasionally brought in steaks from home to cook on a charcoal grill.

"They live on bologna sandwiches and cokes and they don't get enough sleep. They need a good meal once in a while so this is my contribution," he said.

Technicians Joe Gale and Felix Tozeski put in many hours of welding on the cars, often late into the evening. And there were many others who contributed their special talents.

There were many human interest anecdotes that could be told about the project. A few days before the race, the Hybrid team was faced with the task of pulling out the engine to work on the alternator. They had been working day and night for several days so the SAAB team volunteered to work through the night to remove the engine so the others could get some badly needed rest.

One of the team members, who shall remain nameless in this article, asked if he could bring an extra guest to the special showing of the cars and the luncheon that was held August 14 for parents of the teams, corporate contributors, and the press. "I'd like to bring my girl. We haven't had a date since the Fourth of July." He brought her to the luncheon and then to a cookout at Professor Zwiep's house where the entire WPI team gathered for the last time before the race. He decided to take the rest of the night off from the car project and enjoy the first date in six weeks and then promptly fell asleep the first time he sat down!

From the very beginning, the Clean Air Car Project offered WPI several opportunities which amply justified the full support the project was given. It gave continuing favorable nationwide publicity to WPI such as the college has never received before. The project caught the enthusiasm of alumni all over the country and they responded not only with financial support for the teams but also a great many letters of encouragement which meant much to the students. With the WPI PLAN about to be announced, the race project was an excellent test of the project approach to education.

The race was a public relations man's dream. Seldom does a single project offer as many opportunities to publicize the college; to involve the students, faculty and alumni; and to associate the college intimately with so many industrial firms.

Many of the things which gained the most publicity were done primarily to help the teams enroute to California. Anticipating the questions that would be asked each time the teams stopped for fuel, lunch, or at the end of the day's run, the Public Relations Dept. prepared folders on each car which described the vehicle, its technical specifications, the driving team, and the corporate supporters. It also gave a brief description of the purpose of the race. These were handed out by the hundreds.

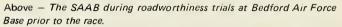
Another publicity-getter was a pin-on button with the words "Drive and Breathe, WPI Clean Air Cars". They were used first as a give-away souvenir to those who contributed to the race fund at public showings before the race. The





Above — The Dark Horse undergoing emission tests during the race.

Below — Starting time of the Propane Gasser is recorded as it crossed the starting line at MIT on August 24.



Below — All unnecessary weight was removed from the Dark Horse, including windows, carpeting, and the original bucket seats.







William S. Dorman, '48, of Tulsa, with his family, who formed the nucleus of the Oklahoma City "pit crew."

balance of the supply was divided up among the teams at race time with instructions to use them up. The first WPI driver through each toll gate passed a handful of buttons to the attendant with a request to pass them down the line to the other attendants. Every car that came through later was met with a WPI button. Policemen, waitresses, and gas station attendants all had WPI buttons. In Odessa, Texas, after finishing the day's run, Ed Lowe of the Gasser team drove into town to buy a newspaper. A blinking blue light and siren brought him to a stop. The policeman's only question was, "Have you got any more of those WPI buttons for the night shift?"

The buttons also mysteriously appeared on the rear license plates of cars from other colleges entered in the race and several competing teams rolled across the finish line without realizing that they were boosting the WPI cause. There were independent observers assigned by the race committee to ride at all times in each race car to insure compliance with all traffic regulations and race rules. They, too, wore their WPI Clean Air Car buttons with pride.

One of the early letters from alumni expressed the hope that the writer might be able to see the cars as they passed through Texas and perhaps give the teams a hand if they needed help. That letter from Carl Schwind, '27, of Irving, Texas, suggested one of the most helpful ideas of the project. Alumni in each of the stopover cities were organized into "pit crews". They were prepared for all sorts of emergencies. They had garages lined up for all night work if necessary. They were also prepared to have local help available for toothaches, broken eyeglasses, or spare parts for the cars. Each pit crew had box lunches ready for the next day's travel.

It was the pit crew in Odessa, headed by Art Dinsmoor, '49, who helped devise the dry ice air conditioner for the Hybrid Vehicle. It was Ed Judd, '50, of Plymouth, Mich., who arranged for the shipping of non-leaded gasoline to pit crews along the route. It was Paul Yankauskas, '42, of Long Beach, Calif., who planned the Pot Luck and Six Pack picnic at Pasadena where a WPI contingent of about 30 was on hand to greet the teams as they finished and provide welcome refreshment. Other pit crew chiefs were John Geffken, '63, of the Buffalo Chapter, who drove to Toronto to help on the first night of the trip; Prof. Mohammad Amin, '59, who was on hand at Champaign, III., Bill Dorman, '48, of Tulsa, and Robert Johnson, '27, who headed the welcoming committee at Tucson.

Once the pit crews were organized, it was apparent that they needed some identifying uniform so the driving teams could recognize them. The answer was a styrofoam pith helmet with a WPI decal on the front. These hats were sent ahead to each pit crew chief and similar hats were given to the teams. At first, the drivers felt the hats were excess baggage but after the first day or two, they found them a real help in locating their alumni supporters. The hats were an excellent publicity device and they gave ready identification in any news pictures. It was not just good sportsmanship which prompted the Pasadena pit crew to rush over to congratulate each non-WPI car as it crossed the finish line in front of the TV cameras!

Other driving teams were well aware of WPI by the end of the race. No other teams had the helmeted pit crews, the Clean Air buttons, or the descriptive folders. With more cars than any other college in the race, WPI also had one of the best organized support teams headed by Prof. Donald Zwiep, head of the Mechanical Engineering Dept. As "tour commander", he was responsible for the logistic planning to get 24 people (driving teams and support people), four race vehicles and their accompanying support cars across the finish line and then get them all back again. It was no small task but it was handled without incident. In this effort, he was assisted by Prof. John Mayer, SAAB crew advisor, who also made the cross country trip.

There were times during the summer when students and staff alike wondered if all the extra work on nights and weekends was really going to pay off. However, when the awards were announced at the final banquet in Pasadena, there were no longer any doubts. WPI students had accepted a challenge and acquitted themselves with honor in the face of competition from some of the leading colleges of engineering in the nation.

What does it take to produce winners like this? It takes great people like the 60 students who worked on the project since it began. They were a cross section of the student body academically, by departments, and by any other standard of comparison. If anything set them apart from other students, it would be their determination, their dedication, and their spirit of competition. It took the support of many faculty members who recognized the project as a great learning experience. It took alumni who would respond to the appeal for assistance in an exciting undertaking not only with their checks but with their time and talents. It was accomplished because there were industrial firms willing to provide equipment and technical expertise. And finally there was the WPI college administration which said, "We're behind you students all the way."

With this mighty team effort, how could WPI Clean Air Cars not finish on top!

WPI Drivers

WPI Propane Gasser

Edward W. Kaleskas, '68, graduate student, mechanical engineering, from Worcester.

Steven A. Hunter, '69, graduate student, mechanical engineering, from Worcester.

Edward C. Lowe, III, senior in mechanical engineering, from Longmeadow, Mass.

Faculty advisor: Prof. Roger R. Borden, MS '61, mechanical engineering.

WPI Hybrid Electric Vehicle

Steven A. Clarke, senior in mechanical engineering, from

William R. Medeiros, senior in mechanical engineering, from N. Falmouth, Mass.

David Nowack, junior in mechanical engineering, from Warren, Mass.

Norman W. Sousa, Jr., senior in mechanical engineering, from West Hartford, Conn.

Chief engineer: Kenneth A. Maymon, '70, mechanical engineering, from Milford, N.H.

Faculty advisor: Prof. Roger R. Borden, MS '61, mechanical engineering.

WPI Clean Air SAAB

Robert G. Guertin, senior in mechanical engineering, from Trumbull, Conn.

Thomas F. Mirarchi, senior in mechanical engineering, from Springfield, Mass.

John J. Luikey, Jr., sophomore in mechanical engineering, from Worcester.

Miss Nancy E. Wood, sophomore in mechanical engineering, from Gardner, Mass.

Faculty advisor: Prof. John A. Mayer, Jr., mechanical engineering.

WPI Dark Horse

Walter V. Thompson, senior in mechanical engineering, from Mt. Vernon, N.H.

Edmund T. Curtis, senior in civil engineering, from Clinton,

Frank A. Rogers, senior in mechanical engineering, from Medfield, Mass.

Staff Advisor: F. Douglas McKeown, '41, University Relations Dept.

Alumnus Advisor: William G. Mears, '53.

WPI Great Teakettle

Allen H. Downs, senior in electrical engineering, from Needham, Mass.

John R. Pratt, senior in chemical engineering, from Plymouth, Conn.

Michael A. Turek, senior in mechanical engineering, from Farmington, Conn.

Thomas J. Werb, senior in electrical engineering, from Warwick, R.I.

Faculty Advisors: Prof. Donald N. Zwiep, head of the department of mechanical engineering and Prof. Fred N. Webster, '39, mechanical engineering.

Motorola, Inc., Franklin Park, Ill.

Contributors to the Clean Air Car Project

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Direct Current and Motor Generator

Dept., Erie, Pa.

Industry Control Dept., Salem, Va.

Small Turbine Dept., Fitchburg, Mass. Semiconductor Products Dept., Auburn, N.Y.

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Goodyear Tire and Rubber Co., Detroit, Mich.

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Instruments Dept., West Lynn, Mass.

Small AC Motor and Generator Dept.,

Schenectady, N.Y.

Framingham, Mass.

Harr Motor Co. and Auto Rental Corp.,

Cambridge, Mass.

Jeep Corp., Toledo, Ohio

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Lindco, Inc., Worcester, Mass.

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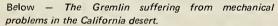
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WP1 also acknowledges with gratitude the contributions of hundreds of students, alumni, faculty, staff and friends everywhere.

Wyman-Gordon Co., Worcester, Mass.



Above — Steve Hunter '69, and Ed Lowe discuss the Propane Gasser's performance with visitors during a Pasadena public showing of the Clean Air Cars.





California alumni greeting WPI drivers at the finish line included Ed Delano, '30, and Richard Walberg, '23. In June, Delano made his personal contribution to reduce air pollution by bicycling 3200 miles to his 40th reunion.



Below - The driving crews in Pasadena.



Gov. Sargent accepting a stuffed crow from WPI students for his rash prediction that MIT would sweep the race.



AN INTERVIEW WITH PRESIDENT HAZZARD

Q. You were selected to be the eleventh president of WPI by a committee made up of trustees, faculty, administration, and students. You noted in your first interview, following your election, that in the coming decade higher education will involve the participation of students and faculty to a much greater degree; furthermore, that at Worcester, we have already seen evidences of this. Looking back on your first year at WPI, do you feel that this involvement and participation which you envisioned a year ago has come true?

A. I think events all across the country have indicated the necessity for increased participation in university affairs by students and faculty, especially responsible participation. Where that has occurred, as at WPI, concerns and problems have been worked out peacefully and successfully.

One evidence of this participation that I saw before I came to WPI was the faculty planning committee. Its procedures certainly were an excellent model for involving faculty, students, alumni, trustees, and administration in development of common goals and objectives. That this was successful is evidenced by the tremendous acceptance we are having all around the country of the WPI PLAN.

Another example is the composition of the various faculty committees operating within the new faculty structure. In all cases where student interests are involved the faculty has invited student participation, and the student body has selected representatives as requested. The same is true for the trustee committee on Academic Policy and Student Affairs, which now consists of four trustees, four faculty, and six students. I hope that in these typical ways we will enable all groups on campus to feel that they have an effective voice in the development and operation of the college. I would definitely say that the involvement I saw as necessary a year ago has come true.

Q. The events of last spring, following the Kent State incident and the Cambodia conflict, saw extensive problems and destruction on many campuses around the country. At WPI, we experienced a relatively calm ending to the year's work. To what do you attribute this?

A. I think the events of last spring as they existed here at WPI were well described in a letter I sent out at that time. I was tremendously pleased at the way things developed on this campus because the resolution of problems was a reasoned one. That is not to say that there were not long hours of discussion among all of us but it was discussion and not violent action. The responsible behavior

and attitudes of students and faculty alike made this possible. To my mind our students acted in a most adult manner so that they and the faculty were strong partners in effective and positive action to maintain the campus on course.

There has been much talk about communication among these various groups. Communication is fine and we have it, but I think there is one other important ingredient. This is responsive action where action is clearly needed. It does no good to listen if listening is just a means of foot dragging, and I think we have responded conscientiously but carefully to definitely expressed needs.

Q. You have been quoted as saying, "Worcester should be thought of as a place of intellectual accomplishment." The Worcester Consortium for Higher Education, Incorporated, just completed its second full year of operation. Do you picture this as either a currently dominant force or a dominant force in the future in terms of education in the greater Worcester area?

A. I believe that WPI should be thought of as a place of intellectual accomplishment as indeed it is. At the same time we do not ever attempt to cover all the fields of intellectual endeavor, and thus the Worcester Consortium allows all of us to recognize intellectual accomplishment in other areas than our own specialties. The very diversity of our student bodies and faculties increases this opportunity enormously and will enable all of us to gain. We will gain particularly in the opportunity for specialization, but we will also gain in the opportunity for students to have a much broader spectrum of intellectual opportunity. To me the Worcester Consortium for Higher Education will play a very significant role in any future success of WPI.

Q. In the past year, you have frequently mentioned the "Technological Humanist", and the past year has seen WPI adopt the WPI PLAN. Do you feel that the WPI PLAN will create the so-called "Technological Humanist"?

A. I guess "Technological Humanist" is sort of a Hazzard trademark by now. I still think it's a nice trademark to have because it represents the kind of person who uses his excellent education to improve the life of all of us. The WPI PLAN will require each graduating student to have done something that relates his discipline to society as a whole. Some relations may be tenuous indeed, but they still will require the student to think in different ways about his discipline than we have asked him to think in the past. These ways of thinking are what society is now requesting from governmental and business leaders. With

the education resulting from the WPI PLAN, WPI graduates will be more than ready to assume leadership roles. They will indeed be technological humanists.

Q. Is the WPI PLAN all that you hoped it would be in terms of an innovative and attractive educational program?

A. It's very hard to say that anything is "all that you hoped it would be." In fact, I'm not quite sure what I hoped the WPI PLAN would be. But I do think it is superb at doing two things.

First of all, it takes us back to our early history in the coupling of theory and practice into an educational program. So it draws on the very best of the WPI historical tradition demanding high quality performance from its faculty and its students.

But secondly, it looks into the future and attempts to answer the problem of more efficient, and at the same time, effective education for each individual. The combination of such things as internship centers, study groups, self-teaching through technological aids and the like all ask a great deal of individual responsibility from each student, but at the same time they will enable each student to learn a great deal more, probably at less cost to the institution than ever before. And this new combination of ways of doing things will certainly force each of us to rethink our present teaching practices with a view to better accomplishment of the objectives we each have for ourselves in teaching, in research, in administration, in whatever job each of us uses to contribute to WPI.

- Q. Have you been encouraged by the response of industry, alumni, students, and other organizations to the WPI PLAN?
- A. I must say that the response of outsiders has been fantastically favorable. The same is true of most of our alumni and students. I think it is clear to all of them that we have a great desire to maintain a very high level of performance but that measuring that performance is to be accomplished in the combining of many new and old methods in a unique way. Certainly this response should be most helpful as we go to corporations and foundations for financial support in the future.
- Q. What do you picture as the size of the school ten years from now? What does this size mean in terms of implementation of the WPI PLAN and new buildings on campus?
- A. I find it hard to visualize very much growth in our student population, although the success of the WPI PLAN might have a significant effect on that. In general, it is my view that we should stay small to retain the close personal interactions that we've always had. Most of the problems of the campuses have come from those that have many tens of thousands of students in residence. The values we are trying to achieve are best reached by retaining our small campus. To this end I could see us reaching a level of two thousand

undergraduate students in another two or three years, but after that I would see no significant increase except perhaps to maintain the same rate of growth as the 18-to-21-year-old population group.

This does not mean, however, that we have no need for new buildings. We have a very great need for a college center, and we have a considerable need for student housing, both undergraduate and graduate. At the same time, some of our older buildings need considerable renovation or even replacement. All of these needs are currently under study and we're attempting to formulate ways of using existing facilities most effectively before we come to any conclusions about the need for additional buildings.

- Q. The past year has seen the administrative reorganization of the Alumni Association implemented, with a much closer working relationship now existing between the alumni body and the college. Along these lines, what do you feel the role can and should be for alumni in the future of WPI?
- A. The much closer relationship between the Alumni Association and the college re-emphasizes the responsibilities of both groups. By coupling them more closely together each is likely to be more responsive to needs expressed by the other. I also hope that the information flow from the college to the Alumni Association represents a typical response coming from this close association.

We have so many areas of concern in maintaining WPI as a significant institution that the opportunities for alumni participation seem to me almost limitless. In fact, I think we have to be careful not to overwork helpful individuals and draw into participation those who have never before had an opportunity. I think especially of the very successful secondary school admissions program where many, many alumni have contributed lots of hours and much effort toward the goal of attracting really capable students to the college. Now with the WPI PLAN we shall be looking to many alumni to help us find "internship centers" where students can learn about real life problems first hand. Or there is the problem of interpreting and understanding events on college campuses, especially to state and federal legislators. Every alumnus who makes the effort to understand and then passes that understanding on to others does a service of inestimable value to the college. And, of course, there is no question that active participation of alumni in all kinds of fund-raising efforts is of major importance to us. The more information we have about sources of funds that we ourselves can go after, and the more often we get alumni contributions, the better off the college will be.

- **Q.** What are your thoughts concerning fraternities and their future on our campus?
- A. Fraternities over the last decade have certainly changed their role in campus life. I think on most campuses

they have ceased to be the most elite and discriminatory institutions and have moved very strongly toward being a group of people living together because they like each other. In addition, most of our fraternities have shown strong concern with regard to social problems and have spearheaded volunteer efforts in the city. Their very constructive efforts for WPI and their living environment both seem well matched to present student interests. Thus, I hope that we can find ways to help them continue.

At present several have serious financial problems because of the city tax structure. The college is working with these fraternities and with the city to determine how best to solve the problem, but at present we don't have a firm solution.

Q. What is your position regarding athletics at WPI? Do you favor the current status of varsity athletics or would you hope to see some changes in this problem?

A. Athletics at WPI have always been handled in a way that seems to match well with our academic program. That is, we do not give special support to students just because they are athletes. This is in marked contrast to many other institutions, as everybody knows.

I think what we're looking for is the provision of opportunities for those of our students who are interested in athletics to participate in well-prepared teams who compete with teams of other institutions more or less of the same caliber. This certainly gives a chance for accomplishment, for development of the understanding of team participation, and, in many cases, the kinds of satisfaction that come from superior performance.

I'm particularly delighted with the physical education department's program in lifetime sports and in their development of intramural sports programs. All of us recognize the value of having a sound health basis from which to operate in the intellectual activity that is our prime purpose. All of these things seem to contribute significantly to that.

Q. How many co-eds and how many black students do you anticipate being on campus in ten years?

A. We are delighted to have an increasing representation from both groups on the campus and are particularly pleased if some of the black students turn out to be outstanding contributors to our athletic activities. But in both cases we are interested in women students and black students as people who deserve and want the kind of education that WPI can provide. We have no quotas, and within the limits of our financial resources encourage all those whom we think can benefit from our educational program to apply and attend. Thus, the total number of either women or black students on our campus will depend on the interest they express and the effectiveness of our continuing encouragement for them to attend. On the basis of our present experience, it does look as if we might end up with perhaps 100 to 200 women and 40 to 100 black

students. These numbers are extrapolations of the present rate at which these groups seem to come to our campus.

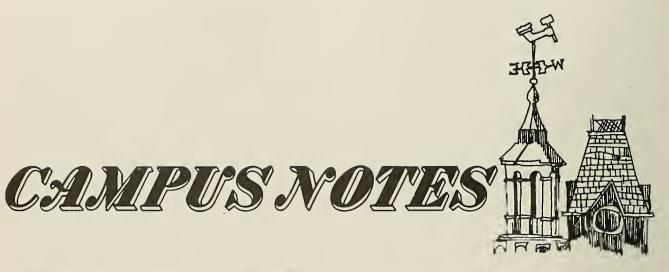
Q. We have heard you mention topics of communication and working together frequently during the past year. Do you feel that communication and cooperation between the administration and the student body is adequate and do you feel that communication between the college and the alumni body is adequate at the present time? If not, what areas or methods of improvement do you foresee in the future?

A. I do indeed feel that communication and cooperation between the administration and study body is adequate. That is not to say that either group is perfect in communicating or cooperating, but that the spirit of cooperation is indeed there. We have the mechanisms for responding to each other. We have the desire to see the college improve through mutual efforts and I think we have seen many additional lines of communication and cooperation open up through this past year.

I think the same is true with regard to the Alumni Association, as I commented in response to an early question. There again, we're not perfect but we have the desire and with proper interest and interpretation of that interest by alumni we shall be able to respond with more avenues of communication than we had before.

Q. In summary, was your first year at WPI what you expected? Would you care to comment briefly on what you feel future years at WPI involve?

A. In general, I would say that my first year at WPI was about what I expected. One can never predict in detail what will happen in a given academic year at a college. Things like Kent State and Cambodia are certainly unique and not predictable. But I do feel that the WPI PLAN, the administrative reorganization of the Alumni Association, the growth of faculty and student participation in academic and student affairs, and the increasing attention that WPI is receiving in the national press, are all different facets of the same theme. That theme to me is, basically, participation and performance at WPI. I feel that we can only attain the kind of performance both in quality and intensity that has been characteristic of our past if we do have participation by all concerned. It has been my objective to see that participation grow and I think we have succeeded in some reasonable measure during this past year. If we can carry this along, keep up our momentum, find the public and private support that we need, then I see the future years at WPI as successful ones. They'll be years that see the results of our college efforts reflecting increased respect and appreciation on all of our past graduates, on our trustees, and on our faculty. By staying as a relatively small, high quality, technologically-oriented institution, I think we will be able to provide a unique kind of education for students from all walks of life, and we will create people who will constructively change and improve this country.



ANNUAL REPORT ISSUED

For the first time, the college has issued an annual report. Released in October, the report not only includes a financial report for the 1969-70 year, but also a report from the President, highlights of the WPI PLAN, and highlights of the year.

The following are excerpts from the Treasurer's Report:

Total expenditures and transfers during 1969-70 rose to a record \$9,747,686 an increase of \$1,084,253 over the previous year's total of \$8,663,433. In part, this increase is caused by innovations in, and future planning of, academic programs, the addition of personnel and institutional planning activities, and inflation. These costs, many once only in nature, were not reflected in a less sophisticated past. The activities they support will be a distinct advantage for the future.

A sizable expenditure occurring for the first time in 1969-70 was the funding of student financial aid from operating revenues and reserves, a basic requirement if WPI is to serve the typical technically oriented student. In previous years, this aid was funded entirely from endowed and grant revenues. The expenditure for student financial aid in 1969-70 exceeded revenues by \$164,000.

Student financial aid in the form of scholarships, opportunity grants, and loans is represented as an expanding part of operations. Awards totaled \$776,275 to 568 undergraduate students — an increase of \$208,050 over the previous year.

Total revenues during 1969-70 also rose to a record of \$9,349,679 — an increase of \$904,124 over the previous year's total of \$8,445,555. Continuing gaps between increased expenditures (\$1,046,865) and increased revenues (\$904,124) led to the 1969-70 deficit of \$398,007. The ways and means of meeting the external and internal forces causing deficits are being defined and implemented. The new WPI PLAN should be a giant step in the right direction.

In addition to tuition and fees, grants and bequests are important sources of revenue affecting operations. During 1969-70, WPI received \$2,068,781 from private and government sources — compared with \$3,706,991 the previous year. (In 1968-69, an unrestricted bequest of \$2,262,000 was added to funds functioning as endowment.)

While \$845,661 was received in the form of bequests and added to endowment, and \$1,092,073 was designated for necessary academic research equipment, special programs and student financial aid, only \$131,047 was received in the form of current unrestricted gifts.

In summary, the first public financial statement for WPI cannot be called bleak. In spite of an operating

deficit, the excitement and challenge of a recharged academic plan coupled with increased revenue support and the foundations of realistic and prudent financial planning will make possible the return of balanced budgets.

HOMECOMING 1970

Homecoming Weekend once again proved to be a huge success and one of the most popular events of the year. With the best weather in recent years, a large turn-out of alumni enjoyed a variety of events.

Among the usual events were home soccer and football games, a barbecue on the baseball field, the tailgate picnic, and fraternity displays. Some 5,000 people were in attendance as WPI defeated the Coast Guard Academy in one of the best football games played by WPI in recent memory.

The tailgate picnic award was once again won by Jim Donahue, '44, and Carl Backstrom, '30, as they "outperformed" the rest of the field. The Homecoming display award was won by Tau Kappa Epsilon with Phi Gamma Delta and Sigma Alpha Epsilon the runners-up.

The Worcester County alumni chapter sponsored a Happy Hour following the football game. It was held in the Music Room in Alden Memorial and was extremely well received by the over 200 people who

attended. It was a first-time event in the schedule of activities for the weekend, and it appears to have won a permanent position on the schedule.

GRANT RECEIVED

United States Steel Foundation recently announced the awarding of a \$21,000 grant to WPI. It was a portion of \$33,800 awarded to six central New England colleges by the foundation. A statement accompanying the award called on Americans of all ages "to help bridge the so-called generation gap." The grant was comprised of \$1,000 as an operating grant and \$20,000 for capital needs which will be used to buy equipment for the study of properties of materials.

FACULTY

The full-time faculty at WPI now numbers 167. In addition, there are 17 part-time faculty members and 8 on the ROTC staff. There are 22 new full-time faculty members this year, but many of these are full-time members who have replaced part-time members.

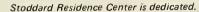
STODDARD RESIDENCE CENTER DEDICATED

Stoddard Residence Center, three units housing 60 students each and located on Institute Road between Einhorn Road and Hackfeld Road, was dedicated in ceremonies on Homecoming Day. Among those participating in the ceremonies were Dr. George W. Hazzard; Robert W. Stoddard, Chairman of the Board of Wyman-Gordon Co. and a life trustee of WPI; Francis W. Madigan, Jr., '53, of F. W. Madigan Co., Inc., the general contractors; and Dr. William E. Hanson, '32, Chairman of the WPI Board of Trustees.

Each of the three buildings in the complex includes a central lounge area which opens onto a central outdoor patio area. One unit contains the college's first infirmary, a seven-bed unit, and the same unit also contains an apartment for the resident manager of dormitories. All three buildings are heated electrically.



The winning tailgate picnic area.





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ENROLLMENT

With a freshman class of 545, 25 of whom are co-eds and nine of whom are blacks, the total undergraduate enrollment now totals 1,806. This total includes 49 co-eds and 18 black students. Also enrolled on campus are 248 full-time graduate students.

The entering class of 545 students almost exactly matches the goal established a year ago for the size of the class, 550 students. The size of the class reflects the anticipated size of future entering classes as the college moves toward an enrollment goal of 2,000 undergraduates and 500 graduate students.

Enrollment (including graduate students) in the various degree-granting departments is as follows:

granting are partitioned to an inches	
Biomedical Engineering	13
Business	9
Computer Science	68
Chemical Engineering	156
Chemistry	105
Civil Engineering	214
Electrical Engineering	302
Management Engineering	90
Mathematics	104
Mechanical Engineering	338
Physics	71
Miscellaneous	35
Non-departmental	549

SPECTRUM 1970-71

The student social committee, under the chairmanship of Donald I. Baron, '71, of Mattapan, Mass., and with the cooperation of Mrs. Jennifer Weininger, wife of WPI Professor Stephen J. Weininger, is sponsoring a program titled "Spectrum 1970-71" for the WPI community and the general public. In its inaugural year, it has received strong support and has attracted good attendance. Groups having already appeared include:

Y. G. Srimati. Culture of India through painting, music, and dance.

St. Louis String Quartet. Chamber music.

Guy Carawan. American folk music.

Connecticut-Wesleyan Experimental

Movement Lab. Modern dance.

Groups which will be appearing through the remainder of the year include:

Dec. 9. Merle Harbach Presents An Evening with Harold Pinter. The world of contemporary dramatist Harold Pinter as interpreted by actor Merle Harbach.

Feb. 14. Miguel Rubio. Spanish quitar.

Feb. 21. Pacific Repertory Company. Two plays by Eugene Ionesco — "The Chair" and "The Lesson".

March 28. The Players' Theatre. Stephen Vincent Benet's "The Devil and Daniel Webster".

April 16. MIT Symphony Orchestra. Student ensemble.

May 4. Merle Harbach Presents An Evening with John Donne. Merle Harbach returns for an interpretation of 17th century poet-divine, John Donne.

OFFICE OF CONTINUING EDUCATION

Prof. Robert J. Hall has been named director of the newly-established Office of Continuing Education. A member of the WPI faculty since 1956, Bob has been associated with the departments of mechanical engineering and management. He has already assumed his new duties on a part-time basis and will be on a full-time basis beginning February 1, 1971.

President Hazzard said, "WPI is committed to an educational philosophy that recognizes the ability to learn as well as learning; that treats four years in college as only one part of a lifelong learning process; and that recognizes the advantages of a return to the classroom after experience in the real world.

"With this philosophy, WPI has to extend its role beyond the traditional undergraduate and graduate education of young people to similar, but relevant, education for older people. To this end, the college should provide a continuing education program in its areas of professional competence," he concluded.

The president pointed out that the increased administrative emphasis on continuing education will increase the college interaction with the community and with the proper emphasis, "service through education."

WPI's Evening Programs were begun in 1955 and this year are expected to have an enrollment in excess of 400. There have been four general areas for this type of education. They are the opportunities for part-time study leading to the bachelor or master of science degrees and several professional non-credit courses in varying fields of interest; off-campus courses offered in cooperation with several area industries; the In-Service Institute for secondary school science teachers and the School for Industrial Management.

Prof. Hall, a graduate of the University of Massachusetts, received his master of science degree from Cornell, where he was an instructor for two years before joining the WPI faculty. He has been an associate professor since 1963.

Some of Prof. Hall's first efforts will be to determine the needs of the community for special programs, with or without credit; to establish relationships with other area academic institutions for most effective and efficient continuing education programs; to work with the WPI deans to establish credit and degree requirements, as well as to coordinate these programs and to develop them, as well as the policies and staff for their implementation.

JOSEPH J. MIELINSKI, '63, NAMED

Joseph J. Mielinski, '63, has been named by the college to the position of administrative assistant in the Environmental Systems Study Program. He is responsible for the co-ordination of the environmental

systems studies program funded by a large grant announced recently by the Sloan Foundation. "The underlying thought in the program is to take an engineer and to instill in his disciplinary thinking a concern for the environment," says Mielinski. "We hope to inculcate in our engineers that it is their responsibility to view a project from all its practical aspects, including the environment."

The following article explains some of the details of the program.

ENVIRONMENTAL SYSTEMS STUDIES PROGRAM

An exciting new program at WPI is helping to pave the way to the implementation of the WPI PLAN.

The Environmental Systems Study Program (ESSP), funded in part through a grant from the Alfred P. Sloan Foundation, has added a new to WPI's dimension educational process. This new project-based interdisciplinary study plan, focusing on environmental problems as the study medium, will build upon the extensive know-how representing both educational and research commitments WPI. throughout The program emphasizes active learning through on-site participation where the student can gain practical experience, realize value of interdisciplinary approaches to problem-solving, and recognize the relevance of theoretical classroom learning.

In a cooperative effort with educationally-minded industrial and governmental organizations, undergraduate teams will address themselves to developing solutions to real environmental problems with particular attention paid to the systems approach of analysis and design.

Several interested alumni and friends of WPI are assisting ongoing project development for both the ESSP and the WPI PLAN with organizations such as Norton Co., the Metropolitan District Commission (MDC) in Boston, Boston Edison, the City of Worcester, Dupont, General

Electric, U.S. Steel, ESSO, Union Carbide, and others. Project content encompasses comprehensive studies dealing with a variety of existing air and water problems, product development problems, and solid waste problems.

Juniors will enter for the first time in February of 1971, combine with a faculty advisor, and prepare for the internship study portion of this continuing program. The summer will be spent on-site conducting an intensive investigation of the problem. The student team will return to campus in the fall and participate throughout the senior year in a project course involving design development and a systems study of their proposal.

The creative aspects of education, in particular the student's ingenuity and originality, will be developed with considerable emphasis on the natural interface of science and technology with the social sciences. The ESSP is intended to develop in students of all disciplines a concern for the environment and a sense of responsibility to consider all aspects of a problem, the systems approach, throughout their career. This involves venturing beyond the technical aspects of problemsolving to consideration for the human values, a sensitivity for the natural beauty, and the lives of the people surrounding them.

INTERNATIONAL ZEOLITES CONFERENCE

The second International Conference on Molecular Sieve Zeolites was held on the WPI campus during the week of September 7. The chairman of the conference was WPI professor Dr. Leonard B. Sand, and over 300 authorities from all fields attended, including representatives from 15 foreign countries.

The conference studied the use and properties of molecular sieve zeolites, a solid crystalline material used in the manufacture of gasoline, petroleum products, and detergents; in water and air pollution control; and in the maintenance of environmental quality in spacecraft.

Included in the more than 75 technical papers which were presented were three papers which were coauthored by WPI undergraduates and which were outstanding examples of the type of project work which will develop as the WPI PLAN is implemented.

STUDENTS OFFER TO CLEAN UP SALISBURY POND

About 45 WPI students recently volunteered to aid the city by attempting to isolate the sources of pollutants entering Salisbury Pond. The offer of assistance was made to the City Council by student body president David W. Hobill, '71, of Whitman, Mass., after the city health department decided the problem could not be investigated due to understaffing problems. The offer of assistance was enthusiastically received by the City Council and has resulted in much favorable publicity for WPI students.

TUITION INCREASES

WPI will increase tuition by \$125 to \$2525 per year, effective in September 1971.

In making the announcement, Dr. Hazzard said, "Our trustees have reluctantly approved an increase in tuition of \$125 made necessary by rising costs, but there is no alternative if WPI is to continue to provide a high quality education."

He continued, "It must be recognized that as is the case with almost all private colleges, WPI's tuition charge does not cover the full cost of education for each student. Our modest increase in tuition will be supplemented by increased giving from alumni, corporations, foundations and others who believe in our educational program."



This fall two of the three sports played during this season — soccer and cross country — have enjoyed one of their finer seasons. Football, however, which usually gets more news space, has had a somewhat disappointing season.

FOOTBALL

In the early fall when the football team returned to the WPI campus, Head Coach Mel Massucco, starting his fourth season at WPI, felt that if a few key positions could be filled it would be a successful campaign. A few of those positions were filled, but bigger problems developed and the perennial lack of depth made it a long fall.

The season opened in Schenectady, N.Y., against Union College, with many sophomores dotting the lineup. Led by Co-captain Mike Santora, '71, of Grafton, Mass., the Engineers' spirit was great, but the youthfulness of the team and the fact that it was the first game of the season caused the gridmen to be overwhelmed 37-13.

The Engineers faced possibly the strongest Bowdoin and Middlebury teams in recent years in the next two games and lost both, but they weren't without their shining moments. Don St. Marie, '71, of Putnam, Conn., recorded the longest score of the season, returning a Bowdoin punt 53 yards, and WPI found a top receiver in James Buell, '73, a local boy from Worcester's South High School, who scored two touchdowns in these two games. Jim, however, came up with a broken collarbone and was lost for the rest of the season but will return for two more potentially big seasons.

The team "found" themselves in the fourth game of the season in a home game and recorded their first victory of the season against a strong Bates College team. This was certainly a game to win, as the 1970 Engineers were being viewed by the 1938 and 1954 undefeated teams (see picture). Murray Glazer, '72, from Brooklyn, N.Y., was the leading rusher with 109 yards in 28 carries, and Steve Joseph, '72, junior quarterback from Norwell, Mass., connected for 12 passes for 156 yards.

After a discouraging loss to a perennially strong Wesleyan University team in Middletown, Conn., 34-13, the Engineers roared back to upset the Coast Guard Academy 14-6 in the 1970 WPI Homecoming game on a beautiful fall afternoon. Scott Dineen, '71, fullback from Levittown, N.Y., enjoyed the finest game of his career, gaining 120 yards in 25 carries, and sophomore standout Wayne Pitts, '73, of New Bedford, Mass., gathered in three passes and rushed for one touchdown.

Our Engineers then faced RPI's Engineers in a nose-to-nose battle and came out on the losing end by one point, 15-14. With one game left, the gridmen must look to next year and the return of many fine experienced juniors and seniors.

SOCCER

The Tech Booters (defending New England Intercollegiate Soccer League College Division champions and holders of the Sampson Cup) have an excellent chance to repeat this tremendous accomplishment. Alan King, Coach of the WPI Soccer team since

1957, seems to put together year after year the right ingredients to come up with an unbeatable blend of ability and desire to give every opponent their toughest game.

Following two easy victories (3-1 over Hartford and 2-0 over crosstown rival Holy Cross), the Booters traveled to Medford, Mass., to face a highly touted Tufts University team, Jack Blaisdell, '72, of E. Longmeadow, Mass., brother of Ken, Jr., '68, and son of Ken, Sr., '40, led the team and was backed by the fine goaltending of Tom Terkanian, '72, of Lexington, Mass., as the Engineers came out on top 3-2. A shutout of MIT followed, and then B.U. arrived at Worcester with several big victories under their belt. Not to be awed by any team, the WPI Booters went on to humiliate B.U. 5-1. Lionel Saint-Victor, '71, of Port-au-Prince, Haiti, Co-captain, Bruce Kern, '73, of Florham Park, N.J., and Jack Blaisdell once again provided the offense.

The team met their first and only defeat of the year before a fine Homecoming crowd, losing to the Coast Guard Academy. It was a defensive game, actually controlled by the Engineers until the final period. The Bears from New London struck for two goals in the final period, and WPI just couldn't find the net.

The Booters finished up 9-1-1 and at press time were waiting to hear whether they will be offered a bid to compete in the College Division New England Championships.

CROSS COUNTRY

The Harriers have enjoyed one of the finest seasons in their history. One of the reasons for the fine season is certainly the depth of the squad. In recent years, the Engineers have had one or two good competition runners, while this year it is not uncommon to see six or seven WPI names in the top 15 finishers.

Co-captain Mike Malone, '72, of Taunton, Mass., has picked up several firsts and is the strong man on the team. Co-captain Bill Light, '71, of Port Chester, N.Y., and Andy Murch, '73, of Worcester, Mass., although not often in the winners' circle, are consistent point scorers for the team. Rich Stockdale, '73, of Putnam, Conn., and Mark Hoyt, '72, of Burlington, Vt., have continually improved since the season's beginning and have become consistent performers in the late season meets. We congratulate Frank Sannella and his team for the fine 9-5 record.

UNDEFEATED FOOTBALL TEAMS HONORED

WPI's only undefeated football teams, the teams of 1938 and 1954, were honored on October 10 in a well-arranged program sponsored by the Poly Club under the leadership of Ted Coghlin, Jr., '56, President.

With the members of both teams together for the first time in many years, they were honored at halftime of the Bates-WPI football game. Festivities included the introduction of the players in attendance and a recounting of the highlights of those undefeated years. Following the game, which saw WPI's first victory of the 1970 season, the teams and their families attended a very successful social hour and dinner in Morgan Hall.

1970 FOOTBALL

WPI		Opponent
13	Union	37
15	Bowdoin	34
0	Middlebury	46
19	Bates	12
13	Wesleyan	34
14	Coast Guard	6
14	RPI	15
7	Norwich	40

SOCCER

WPI		Opponent
3	Hartford	1
2	Holy Cross	0
3	Tufts	2
2	MIT	0
5	B.U.	1
7	Lowell Tech	2
3	Clark	3
4	Assumption	0
2	Coast Guard	3
3	U. Mass.	2
6	A.I.C.	0

CROSS COUNTRY

WPI		Opponent
15	Assumption	72
15	Clark	92
15	Worcester State	65
48	MIT	37
48	RPI	36
27	Wesleyan	29
47	Bates	16
23	Tufts	32
27	Brandeis	30
20	Bentley	43
51	Coast Guard	57
51	Williams	23
25	Amherst	32
18	Trinity	45

SOCCER TEAM CONGRATULATIONS!!

Soccer team selected to play in the NCAA'S Region I University Division Tournament. Facing the nation's 3rd-ranked team, Harvard, they lost in the first round, 6-0. First time they've played in the University Division.

Alan King named New England College Division Soccer Coach of the Year.

WPI team named top New England College Division Team.

Jack Blaisdell, Lionel St. Victor, and Tim Rooney named College Division All-Stars.



Part of the gathering as the undefeated football teams were honored.





Alan King, Coach of the year



WINTER ATHLETIC SCHEDULES

	VA	RSITY BASKETBALL				FR	ESHMAN BASKETBAL	-L							
Head Coach	– James He	errion			Head Coach — Kenneth J. Kaufman										
December	5	Wesleyan	Н	8:00 p.m.	December	5	Wesleyan	Н	6:00 p.m.						
	9	Tufts	Н	8:00 p.m.		9	Tufts	Н	6:00 p.m.						
	12	Assumption	Н	8:00 p.m.		12	Assumption	Н	6:00 p.m.						
	15	Springfield	Н	8:00 p.m.		15	Becker Jr.	Н	6:00 p.m.						
	28, 29, 30) JC Holiday Festival	Н		January	9	Williams	Α	6:00 p.m.						
January	6	Bowdoin	Α	7:30 p.m.	February	5	A.I.C.	Н	6:00 p.m.						
	9	Williams	Α	8:00 p.m.		10	Lowell Tech	Α	6:00 p.m.						
	29	Bates	Α	8:15 p.m.		13	M.1. T .	Н	6:00 p.m.						
	30	Colby	Α	2:30 p.m.		16	Trinity	Н	6:00 p.m.						
February	5	A.I.C.	Н	8:00 p.m.		20	Suffolk	Н	6:00 p.m.						
	10	Lowell Tech	Α	8:00 p.m.		23	Boston University	Α	6:00 p.m.						
	13	M.I.T.	Н	8:00 p.m.		27	Clark	Н	6:00 p.m.						
	16	Trinity	Н	8:00 p.m.	March	2	Brandeis	Α	6:00 p.m.						
	20	Suffolk	Н	8:00 p.m.		4	Amherst	Α	6:00 p.m.						
	23	Boston University	Α	8:00 p.m.											
	26	Coast Guard	Α	8:00 p.m.		JUNIO	OR VARSITY WRESTL	ING							
	27	Clark	Н	8:00 p.m.											
March	2	Brandeis	Α	8:00 p.m.	Head Coach -	 Leonard 	Polizzotto								
	4	Amherst	Α	8:00 p.m.											
					December	8	Worc, Academy	Α	4:00 p.m.						
	1//	ARSITY WRESTLING				15	M.1.T.	Н	6:00 p.m.						
	٧,	Andril Whedreing			February	18	Lowell Tech	Α	6:00 p.m.						
Head Coach	- Leonard	Polizzotto				24	U. of Mass.	Н	6:00 p.m.						
December	5	Brandeis	2:00 p.m.		JUNI	OR VARSITY SWIMMI	NG								
December	10	Coast Guard	H A	-	Head Coach -	- Carl S. P	eterson								
				7:00 p.m.											
	12	Tufts, Boston Univ.	A	12:00 noon	December	12	Coast Guard	Н	1:30 p.m.						
Inches	15	M.I.T.	Н	8:00 p.m.		17	Nichols	А	7:30 p.m.						
January	9	Williams	A	2:00 p.m.	January	13	Worc, Academy	Α	4:00 p.m.						
February	13	Hartford	Н	2:00 p.m.	February	17	Clark	Н	7:30 p.m.						
	18	Lowell Tech	A	7:30 p.m.	,	27	Tufts	Α	2:00 p.m.						
	20	Holy Cross	Н	2:00 p.m.											
	24	U. of Mass.	H	7:30 p.m.			HOCKEY CLUB								
	27	Dartmouth	. Н	2:00 p.m.											
March	4, 5, 6	Tourney at Lowell Tec	ch		Head Coach — Leonard T. Bowen										
	V	ARSITY SWIMMING			November	28	M.I.T.	Α	7:00 p.m.						
	•	A CONTINUENCE			December	7	Worcester State	Н	6:30 p.m.						
Head Coach	- Carl S Pa	eterson			December	9	Assumption	H	6:30 p.m.						
. Jour Goacii	Carro, Fe					14	Fitchburg	A	8:45 p.m.						
December	2	Holy Cross	Н	7:30 p.m.		16	Nichols	Н	8:45 p.m.						
December	8	Babson	Н	7:30 p.m.	January	6	St. Anselms	н	8:45 p.m.						
	12	Coast Guard	Н	3:30 p.m.	January	11	Fitchburg	H	6:30 p.m.						
January	9	Northeastern	А	2:00 p.m.		20	M.I.T.	A	7:00 p.m.						
February	11	U. of Mass.	H	7:30 p.m.	February	3	St. Anselms	A	8:30 p.m.						
Cordary		Trinity	А		rebluary	8	Worcester State	Ĥ	8:45 p.m.						
	20	<i>'</i>		2:00 p.m.		10	Assumption	н	8:45 p.m.						
	23	Brandeis	H	7:30 p.m.		17	Nichols	Н	6:30 p.m.						
Marah	27	Tufts	Α	3:30 p.m.				Н	6:30 p.m.						
March	11, 12, 1,	3 New Englands				24	Bentley	П	0.50 p.m.						

RESPONSIBILITY and RESPONSIVENESS

by Donald P. Reutlinger

Dean of Student Affairs

(From a Presentation Given to Alumni Leaders in September, 1970)

I suppose when anyone is asked to invest their pride and support in some kind of an operation they are entitled to a picture of the stability of the operation, so I think I might discuss with you today what kind of a community we have here at WPI. I think that the key way of describing this kind of community lies in noting the responsibility of the students and the responsiveness of the institution, and I think that as long as the students remain responsible in their behavior — and I don't say unconcerned with the great political and social issues of the day, but responsible in the expression of their concern — then there is time and there is room for the institution to be responsive to them in all reasonable ways. By the same token, as long as the institution remains responsive, I think we can count on responsible students.

This is the kind of situation that was seen here during May last year in contrast with other schools. As this year goes along, I think that all predictions seem to indicate that it is going to be a worse year across the country than we have seen in the past, but I don't see anything in the cards for us to change our picture. I think we have got a situation here where the kids who feel deeply nevertheless know how to keep those feelings and their form of expression in appropriate channels. What we have here is a community, I think, that participates in its own future, and the WPI PLAN which will be the focus of what you will hear about, of course, is the heart of that future.

As far as the student community goes, I think we can say that we have moved forward here. We have begun to bring in two groups that are much in the news — blacks and gals. Our doubling rate for each group is one year; we brought in some 25 girls last year and another 25 this year, and the number of blacks on campus has also doubled this year, though it is still only 17. Now, of course, I don't think either of these doubling rates can go on for too long — at that rate we'd be a women's college in seven years! — but what I'm trying to suggest is that there is a healthy kind of reasonable, responsible growth here.

This institution is responding appropriately to great contemporary needs. There is certainly a lot of untapped talent amongst women, and I think we are starting to see the necessity for educating women in all walks of life that might appropriately be theirs according to their abilities. So far as our growing black community is concerned, I think

two things may be said. Affluence does not insulate blacks against a lot of the negative spin-offs of technological development the way affluence insulates so many of us who are white. On the other hand, neither have blacks developed so far any kind of managerial class that could at all be called a managerial class, and current efforts at supporting so-called "black capitalism", which I'm sure you have read about, tend to be very superficial things — crash programs, public relations efforts with inadequate long-run capitalization. But it is the long, slow, steady, careful haul that we must be concerned with as educators.

Now I would like to skip to the fraternities in order to draw an analogy here. The fraternity community in general and our own fraternities here are in financial trouble. At least three of them are in very bad financial trouble right now. And yet they offer to students a scale of group identity that is very advantageous to a late adolescent. A late adolescent struggling for his own identity is going to find it much easier to build that identity amongst his peers. If we can continue to see the fraternity type of life go on here, I think it is going to be a great boon for the future of this school. By analogy, the blacks, most of them, are now living on one floor of one of our dormitories. I would expect an emergent black student union in the course of this year. This is not something that should horrify anybody. I would expect that it would come. They are trying to search for the same kind of in-group solidarity that fraternity men always have, and though one could wish that adolescent identity were easier to come by, growing up is hard. Now this is also the same kind of situation our gals find by living somewhat together. Now I say somewhat together. They are "segregated" too, set apart at the end of a hall, and there are men on the other end. This may be the limit of the kind of co-educational housing we'll get into, but this makes a lot of sense in this kind of a set-up. I think the point is that in any community that is viable - and ours is a small one, we are a small school, but it is still a very large school for a lonely freshman coming in - in any community that is viable, it has to have its subcultures.

One hopes, of course, that these groups are not abrasive on one another, and this is where we can, I think, with some anticipation in our office, be sure we can head off those kinds of abrasive confrontations and polarizations that are occurring throughout many of our schools and are just tearing our schools apart. The way I think in which we can do this is by encouraging, again, the responsible participation of students. We had four students on the Trustee Committee on Academic and Student Affairs last year. We will continue this. This gives student ideas a route right to the trustees. We have students on our food committee, on the planning committee for future housing and also on the planning committee for the development of a campus center. And of course we have our Tech Community Council with all forms of representation and participation.

But I would like to tell you about one particular situation in which a student has become involved, not because it is such a significant thing in itself, but because the principle involved, I think, is worth looking at. As a new arrival in the WPI community last summer, I was told that I ought to go down and see how the hippy community lives at night down in Elm Park and along Highland Street, and so I put on the hippiest clothes that I have - a cashmere sweater and some khaki pants, mussed up my hair a bit - and went down. After spending a great deal of time in deep study of the hippies – about four or five minutes – I went in to get a pizza pie at a parlor there and saw a fellow reading a computer print-out. I thought, "Wow, I'm home." I introduced myself and, yes, he was a WPI student. It turned out that he was a student who is carrying on a love affair night after night with a two-million-dollar girl friend down here below floors in this library. He loves computers, and so he brought me back and led me around. I was incredibly dumb, and he was doing just as a good teacher must - being patient with his student. And so we started talking about this and that and we went on for a couple of hours. It turned out that he offered to write us a rooming program for incoming freshmen. Now this is probably not a very elaborate thing. It is something like a computer dating program, I suppose, but what it will offer is a variety of criteria by which students might choose their roommates, and we haven't had that so far. This will be a technological means to a slightly more humane community. What we are doing is extending the range of student choice by consulting students technically to create a better system in the community. I think you can see readily that this kind of principle applied widely enough can be a terrific boon to heading off the kinds of troubles that unresponsive institutions have been having. I wouldn't want to parade this one anecdote very far, but I think the principles of a kind of community cooperation exist here, and if roommate conflicts can be resolved - resolved in advance - then similar planning might by the same principle serve in other forms to aid in conflict resolution, responsible students working within an institution responsive to human needs.

One reason for the politicization of so many of our campuses is a failure of social imagination. We have too few basic models for conflict resolution and cooperation - our models have been confrontational, adversary models, judicial, political, negotiational through collective bargaining. But there are others, participatory and cooperative - those drawn, for example, from consensual discussion or non-zero-sum games - and it is a puzzling failure of the campus imagination that we have not attempted systematically to experiment with our own brain-children. What some of these experiments might have in common could be the reciprocity between experimental subjects and experimental objectives, between the individual and the institution - what I earlier called the reciprocity between responsible students and a responsive faculty and administration. This can take time, but unlike so many other colleges today, WPI does have some time on its side. We are fortunate that we have already begun to seize this moment of history that we still have left.



Chapter Programs and the Annual Alumni Fund

ANNUAL FUND

Although only preliminary returns are in for the 1970-71 Annual Alumni Fund, it appears as though an excellent start has been made by our alumni. Early indications point to a participation level above the 50% goal for the first chapter solicited (Berkshire) and a dollar value which should equal or exceed their chapter's goal. In addition, the solicitation of the administrative people at WPI who are alumni has resulted in a 100% participation level and an average gift of over one hundred dollars. Thus, there are many signs which contribute to the optimism.

Starting with a basic philosophy that personal solicitation procedures would be the best way to conduct the Annual Fund this year and the best way to improve alumni giving, the program was organized on a chapter-by-chapter solicitation basis, with each of our 28 chapters being solicited during a short and concentrated period of time. Alumni who are out-of-district are being solicited by mail.

Our goals this year call for a 50% participation level and a monetary goal of \$300,000, more than double our best previous year. The goal of \$300,000 was set as the alumni portion of a \$600,000 fund raising effort which is a result of a budgetary deficit of that amount.

CAN IT BE DONE?

An obvious question, yet an easy question to answer. The answer is a very emphatic YES! And the reasoning behind the affirmative answer is based on the performance of annual funds at other colleges in the northeast. A representative group of other institutions, which excludes Harvard, Yale, and Dartmouth, but includes, among others, Amherst, Bowdoin, Holy Cross, RPI, and Stevens, shows an average gift of \$99.00 and a dollars per alumnus figure of \$38.08. WPI during the same period (1967-69) has had an average gift of \$41.20 and a dollars per alumnus figure of \$13.34. Thus, it appears that our goals are very real and attainable if we only raise our figures to about double our past efforts.

CHAPTER PROGRAMS

Alumni chapter programs have been very successful so far this year as we embark on an expanded schedule. To date over 20 meetings have been held since September and attendance has averaged from 12 to 25 per cent of the chapter membership. Among the more popular speakers from the campus have been Dr. Hazzard; Roger Perry, '45, and Doug McKeown, '41, speaking about the Clean Air Car Race; Dean Bill Grogan, '46, discussing the WPI PLAN; and Dean Donald Reutlinger, talking about students.

About 60 more meetings are scheduled around the country for the remainder of the year. They offer an excellent opportunity to meet old friends and to find out what is going on back on the Hill. Space does not permit the full schedule to be printed, but if you are visiting an area and want information about chapter meetings, a phone call to the area chapter president, listed on page 33, will answer the question. And incidentally, chapter meetings are never fund raising meetings and you will not be asked for a donation to the college.

ADDITIONS AND CORRECTIONS TO THE 1969-1970 FUND REPORT	RТ
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Total Alumni Giving			•	•	•	•				•		\$134,011.79
Challenge Gift						•			•	•	•	. 16,433.56
Matching Gifts												. 14,391.88
Total												164 837.23

CONTRIBUTORS

Clubs

Century Club

Halbert E. Pierce, '29 Carleton P. Borden, '36

George E. Saltus, '53

*Lawrence L. Israel, '61

Booster Club

Myron M. Smith, '15

Donald L. King, '27

L. Howard Reagan, '44

Jaak Jurison, '54

George F. Foxhall, '61

Richard H. Nelson, '61

Peter T. Grosch, '69

Other

*George K. Howe, '01 (Should have been listed as a lifetime contributor) In Memoriam: Richard W. Young, '16

Solomon Hurowitz, '22

Judson M. Goodnow, '23

F. Ray Green, '26

Frederick R. Cook, '28

Charles H. Decater, '2B

*E. Waldemar Carlson, '30

Michael C. Sodano, '31

David Goldrosen, '32

John A. Henrickson, '33

Harold N. Cox, Jr., '37

Raymond W. Schuh, '37

Edward A. Hebditch, '42

*Kimball R. Woodbury, '44

Francis X. Lambert, '48

Paul H. Beaudry, '49

Walter L. Beckwith, Jr., '49 Charles P. Gure, '50

William T. Baker, '51

Philip J. O'Connor, '52

Richard A. Zeleny, '52

James J. O'Connor, Jr., '54

Brian J. Kelly, '55

William E. Lloyd, '56

H. Norris Harris, Jr., '57

Peter C. Dirksen, Jr., '58

"William C. McLeod, Jr., '58

Carl A. Strand, '58

William H. Bailey, '59

*Robert A. Berg, '59 (Should have been

listed as a lifetime contributor)

Thomas Houston, '60

John J. O'Meara, '61

Frederic A. Stevens, '61

William A, Krein, '62

Robert M. Malbon, '63

Frederic D. Riley, '63

Paul A. Schuster, '65

Bruce C. Yung, '65

Ronald Swers, '66

David A. Kuniholm, Jr., '69

IN MEMORY

LESTER W. WEST, '00

Lester W. West, '00, died on July 9, 1970, in Holden, Mass. He was 91.

Mr. West was born in Sterling, Mass., on October 15, 1878 and graduated from Westboro (Mass.) High School in 1896. In the fall of 1896 he entered WPI and graduated in 1900 with a bachelor of science degree in civil engineering.

Mr. West began his career as a structural steel draftsman in Cleveland, Ohio. In 1903 he joined the Eastern Bridge and Structural Co. of Worcester, where he became chief engineer of construction. In 1932 he entered private practice and continued as a structural steel design engineer until his retirement in 1965. He was a consulting structural engineer for such Worcester buildings as the Park Building, the Bancroft Hotel, and the Pearl-Elm Municipal Garage.

He was a member of the Quinsigamond Lodge of Masons, the Worcester Rotary Club, the University Club of Worcester, and was a former member of the Worcester Music Festival Chorus and the Worcester Oratorio Society Chorus. In 1963 he received the Worcester Engineering Society's Scientific Achievement Award.

Survivors include a son, Richard G., of Holden, Mass.; four grandchildren; and one great-grandchild.

BILLINGS M. STEVENS, '05

Billings M. Stevens, '05, passed away on November 2, 1968, in W. Brookfield, Mass. Mr. Stevens was born on February 19, 1884, in Leicester, Mass., and attended Worcester High School before entering WPI in 1901.

He was a retired partner in Mann & Stevens Woolen Co. and had served the town of N. Brookfield, Mass. in many capacities, including selectman for ten years, assessor for 20 years, and being a member of the local draft board and civil defense organization. He was also a member of the N. Brookfield Grange and was president of the N. Brookfield Savings Bank for 12 years.

CLINTON B. TAYLOR, '09

Clinton B. Taylor, '09, passed away on October 27, 1969, at the age of 85.

He was a member of Delta Tau fraternity at WPI, and his business life included work as a chemist, and as a member of the Connecticut State Legislature.

He leaves his widow, Kate L. (Perry) Taylor; 11 children; 35 grandchildren; and three great-grandchildren.

CHARLES T. LEIGH, '11

Charles T. Leigh, '11, passed away on April 19, 1970, after a long illness.

Born on September 25, 1885, in Nelson, Neb., Mr. Leigh attended the University of Washington before enrolling at WPI in 1908.

We welcome
your comments
and ideas
concerning the
publication
of the Journal.

He graduated in 1911 with a bachelor of science degree in mechanical engineering. He was a member of Kappa Sigma at the University of Washington and at WPI was selected for membership in Tau Beta Pi and Sigma Xi.

Mr. Leigh spent the majority of his business career in Pacific coastline states and in Buffalo, N.Y. From 1932 to 1946 he was material supervisor and vice president of Consolidated Aircraft Corp., Buffalo, N.Y., and later was vice president of Consolidated Vultee Corp. in San Diego, Calif. He was also a director and officer of many other organizations. He was active in the San Diego Chamber of Commerce, the San Diego Community Chest, and was a past member of the California Highway Commission.

Among his survivors is his widow, Mrs. Helen (Clemons) Leigh of San Diego, Calif.

LEON H. TREADWELL, '12

Leon H. Treadwell, '12, died on August 23, 1970, in Worcester, Mass., at the age of 85

Mr. Treadwell was born on October 11, 1884, in Bethel, Conn., and graduated from Bethel High School. He entered WPI in 1908 and graduated in 1912 with a bachelor of science degree in mechanical engineering. He was a member of Theta Chi fraternity. He was president of his graduating class at WPI.

After graduation Mr. Treadwell was employed as assistant to the general foreman of the General Electric Co. in Pittsfield, Mass., and in 1915 he formed the Treadwell Electric Co. in Worcester, an organization of which he was president, treasurer, and owner.

He was a member of the Kiwanis Club in Worcester and had served that organization as its president in 1934. He was also active in the Methodist Church in Worcester and New England, and in 1962 he was voted layman of the year by the Wesley Methodist Church of Worcester.

He leaves his widow, Margaret J. (Smith) Treadwell; a son; and two grandchildren.

JOHN C. FRENCH, '13

John C. French, '13, passed away on February 10, 1970, in Montebello, Quebec Province, Canada.

He was a retired chief chemist of Hercules Powder.

Further details are unavailable.

LEON H. GREENWOOD, '13

Leon H. Greenwood, '13, passed away on April 29, 1970.

Mr. Greenwood was born on March 4, 1888, in Fitchburg, Mass., and graduated from Fitchburg High School before entering WPI in 1909. He graduated in 1913 with a bachelor of science degree in electrical engineering and was elected to membership in the honorary society Tau Beta Pi.

He joined the American Telephone and Telegraph Co. in New York City soon after his graduation and served with that company for over 30 years before his retirement in 1948.

At the time of his death, Mr. Greenwood was a resident of State College, Pa.

ALBIN HEDLUND, '14

Albin Hedlund, '14, passed away in his home in Worcester on May 8, 1970.

Mr. Hedlund was born in Sweden on September 2, 1891, and graduated from English High School in Worcester before entering WPI in 1910. He graduated with a bachelor of science degree in civil engineering in 1914. He was a member of Phi Gamma Delta fraternity.

He was superintendent of the Logan and Whitcomb divisions of the U.S. Envelope Co. for many years, before his retirement in 1956.

He served as a U.S. Army captain in World War I with the 303rd Field Artillery, 76th Div.

He was a member of Salem Covenant Church and a member of the Tech Old Timers.

He leaves his widow, Anna E. (Ullstrom) Hedlund; a daughter; two sisters; a grandson; and several nieces and nephews.

G. NOBLE DAVIDSON, '15

G. Noble Davidson, '15, passed away on August 23, 1970.

A native of Chicopee Falls, Mass., Mr. Davidson entered WPI in 1911 and graduated in 1915 with a bachelor of science degree in electrical engineering. He was a

member of Tau Beta Pi honorary society and Alpha Tau Omega social fraternity.

Mr. Davidson was employed by the Savage Arms Corp. from 1915 to 1949 and held such positions as assistant superintendent, works manager, general manager, and finally vice president of that organization. He then formed the Noble Manufacturing Co., Inc. of Haydenville, Mass., an organization of which he was president and treasurer.

He was a registered engineer in Massachusetts, a Mason, a member of the Chicopee (Mass.) Planning Commission, and president of the Chicopee Falls Savings Bank.

He leaves his widow, Alice W. (Harrison) Davidson; a son and a daughter.

HAROLD A. CLEVELAND, '16

Harold A. Cleveland, '16, passed away on August 17, 1970, in Pompano Beach, Fla He was 77.

Born in Woonsocket, R.I., on August 14, 1893, Mr. Cleveland entered WPI in 1912 and received a B.S. degree in civil engineering in 1916. While at WPI he was a member of Skull and Phi Gamma Delta fraternity.

Mr. Cleveland was employed by the Associated Factory Mutual Fire Insurance Companies for many years, serving as a resident inspector, an engineer, and a resident engineer.

He is survived by two sons and a brother.

FRANCIS E. SHEEHAN, '18

Lt. Col. (ret.) Francis E. Sheehan, '18, passed away in Independence (Mo.) Hospital on August 6, 1970. He was 75.

A native of Worcester, he was born on May 31, 1895, and graduated in 1918 with a B.S. degree in civil engineering. He was a member of Theta Chi fraternity. He attended the Graduate Civil Affairs School of the University of Michigan.

Col. Sheehan was a former resident of Portsmouth, Ohio, where he was city manager and director of the Portsmouth Housing Authority and Portsmouth Water Works before going on active duty with the Army in 1943. During World War II he served as a lieutenant colonel with the specialist corps of the Army. Following World War II he was deputy director of the military government of Hesse, Germany with headquarters at Wiesbaden. He retired in 1967.

He was a member of the United Presbyterian Church, the Elks, the Exchange Club, and the Ottawa (Kansas) Country Club.

He leaves three sons, three daughters, four sisters, and 18 grandchildren. His wife, Carolyn E. Sheehan, died in 1967.

LOUIS ZIONS, '19

Louis Zions, '19, a realtor and a Washington (D.C.) resident for the past 46 years, died on September 5, 1970, in Washington following surgery. He was 75.

Mr. Zions was born in Mayak, Russia, and came to the United States in 1912. He received a B.S. degree with honors in chemistry from WPI in 1919.

After teaching chemistry briefly at the University of Maryland, he became a realtor in Washington in 1924.

Mr. Zions was an active Zionist, a member of the Zionist organization of America, and was a founder and member of the American Society for Technion, a group that helps support a technical institute in Israel.

He is survived by two sisters.

WILMORE C. HARCUS, '21

Wilmore C. Harcus, '21, passed away at his home in Northridge, Calif., on September 16, 1970.

Born in Pawtucket, R.I., on September 28, 1896, Mr. Harcus attended Brockton (Mass.) High School before entering WPI. He graduated in 1921 with a bachelor of science degree in mechanical engineering, and while at WPI he was a member of Theta Chi fraternity.

Upon graduation, Mr. Harcus took a position with Pacific Telephone and Telegraph Co. in San Francisco, Calif. and in 1929 he joined Paramount Pictures as chief sound engineer, From 1929 until his retirement in 1962 he was associated with the movie industry continuously and at the time of his retirement was employed by Technicolor Corp.

He was with the U.S. Army Signal Corps during World War I. He was a member of the AF & AM, and recently was honored as a 50-year Mason at Van Nuys (Calif.) Masonic Lodge. He was also a life member of the American Institute of Electrical Engineers and a life fellow of the Society of Motion Picture and Television Engineers.

Surviving him are his widow, Hazel, of Northridge, Calif.; a daughter; two sons; one grandchild; and a sister.

JAMES H. ARNOLD, '22

James H. Arnold, '22, passed away on March 25, 1970, in Boynton Beach, Fla.

Mr. Arnold was born on July 8, 1898, in Woonsocket, R.I., and attended Classical

High School in Worcester before entering WPI in 1918.

Further details are unavailable.

MARTIN J. CONROY, '22

Martin J. Conroy, '22, passed away on June 16, 1970, in Livingston, N.J. He was 71.

Born on December 1, 1898, in New York City, he attended Cliffside Park (N.J.) High School before entering WPI in 1918. A member of Lambda Chi Alpha fraternity, he received his bachelor of science degree in 1922 in electrical engineering.

Mr. Conroy spent the major part of his business career being associated with the building materials industry. From 1923 to 1933 he was treasurer of James J. Conroy & Sons, Inc., and later held positions with other building supply companies, including being sales manager of Metropolitan Block & Supply Co. of Bladensburg, Md. For the past three years, he was a real estate salesman for Huppert-Mack Realtors of Bradenton, Fla.

He was a member of the Manatee and Sarasota (Fla.) County Real Estate Association, 3rd degree Knights of Columbus, and the Holy Name Society.

He leaves his widow, Berris (Nichols) Conroy; a son; three daughters; a brother; a sister; and 14 grandchildren.

RAYMOND D. MORRISON, '23

Raymond D. Morrison, '23, passed away in Scarborough, Me., on July 2, 1970, at the age of 72.

Mr. Morrison was born in Newport, R.I., on May 7, 1898, and attended Rogers High School in Newport. He graduated from WPI in 1923 with a degree in electrical engineering, and he was a member of Phi Sigma Kappa fraternity and Skull.

From 1923 to 1926, Mr. Morrison was employed by the General Electric Co. He then was employed for 39 years by the Central Maine Power Co. before his retirement in 1966. At the time of his retirement he was director of industrial and commercial sales.

Mr. Morrison was a member of the Maine Association of Engineers, was a Professional Engineer in the state of Maine, and was a member of numerous other electrical engineering associations. He was a life member of the Industrial Development Council of Maine and was active in the Boy Scouts and the Episcopal Church. He was also a member of the Masons and the American Legion.

He is survived by his wife, Mrs. Miriam (Washburn) Morrison of Augusta, Me.; a son; a daughter; six grandchildren; two nephews; and one niece.

PALMER J. COOK, '24

Palmer J. Cook, '24, passed away on August 9, 1970, in S. Dennis, Mass. He was 70.

A lifelong resident of Southfield, Mass., Mr. Cook was born on June 1, 1900, and attended Phillips Exeter Academy before entering WPI. He graduated in 1924 with a degree in mechanical engineering. He was a member of Phi Sigma Kappa fraternity.

Mr. Cook was a former vice president and treasurer of Turner & Cook, Inc. of Southfield. He was active in the United Church of New Marlboro, Mass., was a Mason, a member of the Grange, and for many years was town treasurer of New Marlboro. He also served as chief of the New Marlboro Fire Dept.

In addition to his widow, Frances W. (Hastings) Cook, he leaves a son; a daughter; two brothers; two sisters; five grand-children; and three great-grandchildren.

FRANCIS J. GREENLEY, '24

Francis J. Greenley, '24, passed away on April 2, 1970.

Born in Chicago, III., on October 4, 1901, he attended Classical High School in Worcester before entering WPI in the fall of 1920. He received a bachelor of science degree in electrical engineering in 1924 and was selected for membership in Tau Beta Pi and Sigma Xi.

After graduation, Mr. Greenley was employed by the General Electric Co. for two years prior to joining the Public Service Electric & Gas Co. of N.J. in 1926. He was with that company until his retirement, and at the time of his retirement he was a sales engineer. During his retirement he worked as a consulting engineer in Freehold, N.J.

Survivors include his widow, Mrs. Francis J. Greenley, of Freehold, N.J.

MICHAEL S. VARTANOFF, '27

Michael S. Vartanoff, '27 (formerly Vartanian), died on March 28, 1970, after suffering a heart attack. He was 69.

Born in what is now known as Tbilisi, the capital of Soviet Georgia, he left Russia in 1921 and spent a year in Istanbul, Turkey, before moving to the United States. A specialist on the Soviet Union in the Army Map Service for 27 years, Mr. Vartanoff began his government career in World War II. In 1945 Mr. Vartanoff attended the San Francisco Conference which founded the United Nations and acted as a Russian language interpreter for former Secretary of State Edward R. Stettinius.

Mr. Vartanoff was a member of the Society of Geographers, the American Name Society, the Association of American Geographers, and the Society of American Military Engineers.

MICHAEL H. MANZI, SR., '37

Michael H. Manzi, Sr., '37, passed away in Nassau, N.Y., on October 24, 1968. He had been supervisor of electrical engineering at Sperry Gyroscope for 28 years.

Born on December 12, 1909, in Millbrook, N.Y., Mr. Manzi entered WPI in 1934 and graduated with a degree in electrical engineering in 1937.

He is survived by his wife, Anne; a daughter; a son; his father; and five brothers and sisters.

ROBERT D. MORGAN, '55

Robert D. Morgan, '55, died in Largo, Fla., on November 1, 1965, after suffering a cerebral hemorrhage.

Born in Albany, N.Y., on May 2, 1933, he attended Bethlehem Central High School in Delmar, N.Y., before entering WPI in September, 1951. While at WPI he was a member of Alpha Tau Omega fraternity, and he graduated in 1955 with a degree in electrical engineering.

After graduation, Mr. Morgan was employed at Fort Monmouth, N.J. and at McDonnell Douglas Corp. in St. Louis, Mo. At the time of his death, he was employed by Minneapolis-Honeywell in Largo, Fla.

He is survived by his wife, Peggy, and two children, Lynne and Steven.

ALFRED F. FERRON, SIM '62

Alfred F. Ferron, SIM '62, passed away on July 5, 1970, in Southbridge, Mass., at the age of 52.

Born in Southbridge, Mass., he was graduated from Mary E. Wells High School and was active in sports most of his life. He played semi-pro football and was active in many softball and baseball leagues as well as being a basketball official.

He had been employed by Hyde Manufacturing Co. of Southbridge for nearly 35 years. He joined the company in 1935 as a grinder and held positions as quality control supervisor, production manager, and plant superintendent. At the time of his death he was vice president of manufacturing.

Besides his mother, Mrs. Albina (Benoit) Ferron, he leaves his wife, Celia P. (Pezzetti) Ferron; three sons; a brother; and three grandchildren.

YOUR CLASS AND OTHERS



1908

While it happened over a year ago, it has just come to the attention of the secretary that our classmate SUMNER A. DAVIS and his son, Dr. S. D. Davis, were given a two-column write-up in the "Daily Home" of Talladega, Ala. At the 9th Annual Eagle Scout Recognition Banquet, "S.A." was honored for forty-seven years active Scouting service, which included founding at Birmingham the first Sea Scout Flagship in the state.

Donald D. Simonds Secretary

1913

John F. Chick & Son, Inc., of Silver Lake, N.H., recently celebrated its 100th anniversary. The firm, a lumber supply and architectural millwork concern, has as its treasurer GEORGE E. CHICK... ALLEN H. GRIDLEY is an engineer with Charles R. Velzy Associates, White Plains, N.Y.

1916

LEON W. DUNBAR is now residing in Tampa, Fla.

1922

EDWARD H. COLESWORTHY reports that he is now residing in Sarasota, Fla.

1923

WILLIAM J. HARRINGTON writes: "I am now residing in home town, Millville, Mass. Retired after 44 years and 10 months with UniRoyal, Inc., in various capacities, mostly as a cost accountant and cost analyst in various parts of the country."... HAROLD H. JUDSON now resides in San Antonio, Tex.

1927

CHARLES F. MONNIER, who is employed by Commonwealth Associates, Inc., writes: "I am in Vietnam temporarily (until early or mid-1971). Heard about Ed

Delano's bicycle ride on Armed Forces radio here in Saigon and exchanged letters with him."... JOHN A. H. CROSIER reports that he is a purchasing agent with Stone & Webster Engineering Corp. in Tuscola, III., and he is residing in Easton, Md.

1928

Prof. CARL F. ALSING has been appointed acting administrator of the University of Hartford (Conn.) School of Engineering. He joined the University of Hartford Engineering School as an assistant professor in September, 1959, and served as head of the Electrical Engineering Dept... THEODORE J. ENGLUND retired in 1969 after 45 years service with Norton Co. in Worcester. He resides in Shrewsbury.

1929

Dr. ARTHUR H. BURR is Sibley Professor of Mechanical Engineering at Cornell



Dr. Burr

University, Ithaca, N.Y. He recently returned after spending two years in India . . . EDWARD S. COURVILLE has retired from the Torrington Co., Torrington, Conn. He was Excelsior Plant manager . . . EROLD F. PIERCE has retired from the Curtiss Wright Corp., Wood-Ridge, N.J., where he was chief scientist.

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1930

CARL G. NORDMARK, advertising and sales promotion manager for the L. S. Starrett Co. of Athol, Mass. has retired and moved to the state of Washington.

1936

CLINTON E. LEECH is a consulting engineer for the Public Service Electric & Gas Co. of New Jersey.

1931

CARL F. SAGE has opened the Pea Soup Andersen's Inn in Buellton, Calif... MICHAEL C. SODANO reports that he retired from General Electric on March 31, 1970, and assumed the position of president of Occidental Petroleum of Japan Ltd. on April 1, 1970.

1933

ALEXANDER L. ALVES, president and treasurer of Engineered Sinterings and Plastics, Inc., has been elected an associate director of the State National Bank of Watertown, Conn. . . Raytheon Co. reports that HARRY F. CLARKE has been named functional manager for parts and materials for Raytheon Co.'s Equipment Development Laboratories in Sudbury and Wayland, Mass. He will be responsible for providing environmental engineering and parts and materials engineering support for the laboratories. He has been with Raytheon since 1966

1934

HOWARD W. ATKINS has been nominated for election to the board of directors of Agway, Inc. The district for which he will be a candidate includes the states of Conn., Mass., and R.I. Mr. Atkins is a fruit grower in Amherst, Mass., operating a 600-acre farm which produces apples, peaches, and pears to be sold in his own retail store.

1937

MORTON S. FINE, owner of Morton S. Fine & Associates of Bloomfield, Conn., a consulting engineering firm, has been elected national chairman of Professional Engineers in Private Practice (PEPP), a functional section of the National Society of Professional Engineers, and he has also been elected to serve as chairman of the Conn. Board of Registration of Professional Engineers and Land Surveyors for the 1970-71 year... The town of Burlington, Mass., has named WESLEY P. HOLBROOK as their town engineer... RICHARD J. LYMAN has been elected a vice president of the New England Electric Power Service Co.

1939

GEORGE C. GRAHAM, JR., has been appointed assistant marketing and sales manager — business papers for St. Regis Paper Co. He is located at the St. Regis Technical Center, W. Nyack, N.Y., and has been with the company since 1967... E. BRUCE CRABTREE is director of marketing for the Erickson Tool Co., Solon, Ohio, and he resides in Hudson, Ohio.

1941

GUSTAF COONTZ, who is director of the U.S. Trade Center in Frankfurt, Germany, and a former Worcester city councillor, has been named winner of the 1970 Clark University Alumni Association Distinguished Service Award... GEORGE F. TAYLOR is a senior project engineer for the Pratt and Whitney Aircraft Corp. in E. Hartford, Conn... GRAHAM T. DOUG-LASS of Southern Pines, N.C., has been promoted to manager of division operations in the central division of Carolina Power & Light Co. Graham spent 15 years in the Marines, retiring as a colonel in 1966 and has been employed by Carolina Power & Light Co. since that time, . . CHARLES L. HOEBEL has joined a newly formed company, Turbonetics, Inc. of Latham, N.Y., as their vice president of marketing.

JOHN M. BARTLETT, JR., is now assistant plant manager for the American Chain & Cable Co., Inc., Page Div., Wiri Products Group, Monessen, Pa.

1942





Bartlett -

Fitts

1945

RICHARD S. FITTS has received an MBA degree from the University of Rochester's executive development program. He has been appointed manager of personnel and general systems in the finance and administration division of Eastman Kodak Co., Rochester, N.Y.

1946

ROBERT S, GAMBLE has been named manager, new venture development, for Commonwealth Petrochemicals Co., a newly formed operating division of Commonwealth Oil Refining Co., Inc. He resides in New Canaan, Conn.

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1948

Married: ROBERT H. SHAW to Miss Arline L. Machacek of Rockville, Conn., on September 5, 1970. Bob is a senior project engineer with Pratt & Whitney Div. of United Aircraft Corp., E. Hartford, Conn.

WILLARD E. ESTEY is a project engineer for Perkin-Elmer Corp. in Norwalk, Conn.

1949

WELLEN G. DAVISON is a professor of mechanical engineering at Western New England College in Springfield, Mass... Champion Papers, Inc., in Courtland, Ala., employs ALBERT HARDAKER as a senior technologist. . . General Instrument Corp. of Hicksville, N.Y. employs JAMES S. ADAMS as director of marketing... ROBERT H. TURCOTT is a construction manager for McDevitt & Street Co. of Atlanta, Ga.

1950

Air Force Lt. Col. FRANK W. HARDING, III recently received the Meritorious Service Medal at the Los Angeles (Calif.) Air Force Station. He distinquished himself as a lunar module vehicle engineer with NASA at their Manned Spacecraft Center in Houston, Tex.



Col. Harding



Meiklejohn .. JAMES H.

MEIKLEJOHN, JR, has been appointed

director of training, group departments at Connecticut General Life Insurance Co., Hartford, Conn. He joined Conn. General in 1956 and now resides in W. Simsbury, Conn. , . EARLE A. HALLSTROM has been named director of manufacturing services of the Acushnet Co. of Acushnet, Mass. He will be responsible for plant engineering, maintenance, industrial engineering, and materials management, Earle resides in Barrington, R.I..., MALCOLM D. HORTON has been transferred to the New York City office of Dames & Moore, consulting engineers in the applied earth sciences. He resides in Fair Haven, N.J.

1951

JOSEPH J. GWIAZDOWSKI is an engineer in the Supersonic Transportation Div. of the Dept, of Transportation in Washington, D.C... FOSTER D. SISSON is located in Mandeville, Jamaica, West Indies, where he is employed by Kaiser Engineers America, Inc... CONSTANTINO MUSTAKIS is residing in Santiago, Chile.

1952

Dr. ROBERT F. ADAMSKY has joined the staff of Bradford Junior College, Bradford, Mass. Most recently, he worked for the NASA Electronics Research Center. . . Extrudo Film Corp. of Pottsville, Pa., has announced the promotion of ROBERT L. FAVREAU to be manufacturing manager... The Pigments Dept., Edgemoor Plant, of E. I. duPont de Nemours & Co., Inc., of Wilmington, Del., employs JOSEPH D. LOJEWSKI as assistant plant manager.

1953

PHILIP A. CHARRON has received an MBA degree from the University of Rochester's executive development program.

1954

OTTO A. WAHLRAB is now employed by John P. Slade & Son Insurance Agency, Inc., of Fall River, Mass. . . ROBERT B. BRODIE writes: "I became a member of the Bar of the Commonwealth of Massachusetts in December, 1968, as well as to the Court of Customs and Patent Appeals in Washington, I have joined the IBM Corp. as a patent attorney for advance technology and data communications in their Raleigh (N.C.) facility. I expect to be admitted to the North Carolina Bar on motion." Bob resides in Raleigh... W. GERALD DUDEVOIR recently received a doctorate degree in engineering from Dartmouth College, He is senior engineer in the Geophysical and Navigational Systems Div. of Sanders Associates, Inc. of Nashua, N.H.... Dr. RICHARD W. LINDQUIST is an associate professor at Wesleyan University, Middletown, Conn.

1956

Army Major ROBERT C. SKELTON was recently graduated from the Armed Forces Staff College, Norfolk, Va.

1957

Married: KEITH O. PRESTON to Miss Kathleen J. Urban of Aiken, S. C., and Oakland, Neb., on August 14, 1970. Keith is employed in Bloomington, III., where he is plant manager for Owens-Corning Fiberglas Corp.

Esso Research and Engineering Co. in Linden, N.J. employs RENE R. BERTRAND... KURT H. FRANCE writes from California: "I came to California in 1958 with my wife Carol to work for the California State Department of Water Resources... I was with them for nine years. . . and I worked on the design and construction of an 1100-ft, suspension bridge and other features of the project. At present I'm an engineer for Clair A. Hill & Associates, consulting engineers in Redding, Calif."... DAVID N. OLSON has been named a vice president of Rowland Prod-



ucts, Inc., of Kensington, Conn. He has been with the company since 1965, and resides in Simsbury, Conn. . . JOHN O. STINSON has been named assistant director of the Berkshire Medical Center, Pittsfield, Mass. He was formerly town manager of Ipswich,

1958

EVERETT W. ANGELL is with the Foster Wheeler Co. in Livingston, N. J. . . The Jamesbury Corp. of Worcester, Mass., has appointed DONALD W. BEAN corporate products manager... DONALD W. ILLINGWORTH writes: "In February of this year, I was appointed assistant vice president of Frank B. Hall & Co., Inc. which we believe is the fourth largest international insurance brokerage firm in the United States with headquarters at 67 Wall St., New York, N. Y. I continue to live in Berkeley Heights, N. J. with my wife, Marcia, and children."... BERTRAND two LEMIEUX is director of engineering for Ocean Sonics, Inc. in El Segundo, Calif... ROBERT B. SUNDHEIM is a partner with Yount & Tarrolli, patent attorneys of Cleveland, Ohio. He makes his home in Shaker Heights, Ohio.

1959

Born: to Mr. and Mrs. PETER A. NELSON, a son, Scott Peter, on July 23, 1970. Pete is a senior test engineer with Westinghouse Electric Corp.'s Astronuclear Lab. in Pittsburgh, Pa.

LCDR. ROBERT A. ALLEN is with the U.S. Navy in Norfolk, Va., and is living in Virginia Beach, Va... WILLIAM H. BAILEY writes: "On August 3rd I was promoted to the position of engineer-foreman of Specialty Products Operation at the Cleveland Bulb Plant in the Lamp Glass Dept. of General Electric where I will have operational and technical responsibility for several special glass making and forming

operations."... The Rev. JOHN H. BRITT, JR, has been chosen the 1970 recipient of the Shrewsbury (Mass.) Jaycee Distinquished Service Award, Father Britt is curate of St. Anne's Church in Shrewsbury... General Electric Co. employs GEORGE B. CONSTANTINE as a sales engineer in Lynn, Mass... Dr. DAVID A. EVENSEN is employed by TRW Co. in Redondo Beach, Calif. . . Urban Transportation Systems Associates, Inc. of Newton, Mass., has THOMAS F. HUMPHREY as their vice president and treasurer. The firm is a transportation planning consulting firm... RONALD S. PERZAN has been promoted to senior engineer in the Boulder Product Test Lab of IBM Corp. in Boulder, Colo... FRANKLIN SALEK recently received a PhD degree from Rutgers University, New Brunswick, N. J... GEZA C. ZIEGLER has been named Dean of Faculty - Stamford Branch, Bridgeport (Conn.) Engineering Institute... Prof. ARCHIE K. McCURDY, MS, has returned to WPI after working toward his PhD degree at Brown University... JOSEPH E. SWIDER, JR. is a systems engineer in the Space Systems Dept. of Hamilton Standard, Windsor Locks, Conn... Winner of the Worcester Engineering Society's 1970 Admiral Earle Award was ROBERT L. PRICE, research engineer

at the Heald Machine Co. in Worcester, Bob's work on local hardness variations in grinding wheels won him the Society's annual award for outstanding work by a young engineer. Presentation was made at the Nov. 6 Ladies Night program.

1960

ARMAND P. FERRO has received a PhD degree from RPI... PAUL E. HONER has been promoted to_field operations manager for Robertshaw Controls Systems Div., Richmond, Va. He was previously sales manager for the company... ARTHUR J. LoVETERE is regional manager for MacDermid, Inc. and is located in Waterbury, Conn... JAMES W. MAHAN is employed by the Aldrich Pump Section of Ingersoll Rand in Allentown, Pa... WILLIAM R. NIMEE reports that he is now regional sales manager for Cambridge Memories, Inc. of Newtonville, Mass... Rensselaer Polytechnic Institute's Dept. of Environmental Engineering has awarded MICHAEL J. O'TOOLE, JR. an MS degree. He is currently employed as chief of comprehensive utility planning in the New York State Dept. of Environmental Conservation... Another recent recipient of a master's degree is EDWARD C. STONE, who received an MBA degree from the University of Hartford. He is a senior

engineer with Fafnir Bearing Co. of New Britain, Conn... S. Brunswick, N. J. employs BERNARD L. TETREAULT as municipal administrator... International Tel. & Tel. in New York City employs EDWARD J. RUSSELL as assistant director of operations research.

1961

MAHAVIR S. SHAH is a civil engineer with Perfect Engineering Associates in Bombay, India. . . Fairleigh Dickinson University reports that HARVEY J. SLOVIN received an MBA degree in management in June, 1970. Harvey is an electronic engineer at the U. S. Army Electronics Command, Ft. Monmouth, N.J. . . BRADLEY E. HOSMER is now residing in Washington Depot, Conn., and is employed as executive vice president of Incentive Techniques, Inc., Norwalk, Conn. . . CONRAD F. MATUZEK is a marketing supervisor for New England Telephone Co., and he resides in Westboro, Mass.

1962

Born: To Mr. and Mrs. ARTHUR E. DOBRESKI, a daughter, Maureen, on February 20, 1970. Art is an electrical project engineer with Geigy Chemical Corp., Cranston. B.I.

Married: THOMAS H. MORRILL to Miss Anne Zarzecki of Watertown, Mass., on

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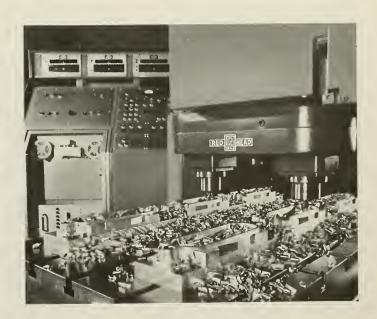
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July 4, 1970. Tom is an assistant professor of physics at Emmanuel College in Boston... ANDREW D. TERWILLEGER to Miss Priscilla E. Clark of Kinderhook, N.Y., on June 27, 1970. Andy is a traffic operations engineer for the City of Hartford, Conn... WALKER T. THOMPSON to Miss Gail E. Malmberg of S. Plainfield, N.J., on July 3, 1970. He is employed by Union Carbide Corp. as a department head, and the couple is residing in Flemington, N.J.

ROBERT W. CHAPIN reports: "I have been promoted to senior civil engineer in the Babylon Office of the New York State Dept. of Transportation. My wife Nancy and I have two sons, William and Steven, ages five and two, respectively."... NICHOLAS A. COTSIDAS is employed in Worcester and resides in Framingham, Mass... MARVIN B. CRAMER writes: "After completing an Army tour as a captain in the chemical corps, I returned to Uniroyal Chemical in 1968. I completed requirements for an MBA degree in August, 1970. I am now enrolled in the University of Connecticut Law School Evening Div. while continuing to work for Uniroval in product development." Marvin lives in New Haven, Conn... RALPH G. JOHANSON is a sanitary engineer with Watkins & Associates of Lexington, Ky.

1963

Married: DAVID E. DUNKLEE, JR. to Miss Gail L. Gilmore of Rockton, Pa., on June 18, 1970. David is an ore analyst with Hazen Research, Golden, Col. The couple is residing in Denver, Col...GORDON M. WARE to Miss Joyce Lee Melendy of Lebec, Calif., on August 12, 1970. Gordon is a student at Portland College, Portland, Oregon.

Born: To Mr. and Mrs. DENNIS W. HEATH, a daughter, Karen Lynn, on May 18, 1970. Dennis is a production engineer for the General Electric Co.'s Circuit Protective Devices Dept. in Plainville, Conn.

ROBERT D. BEHN has rejoined the Ripon Society in Cambridge, Mass., as its executive director. He was formerly assistant to the governor of Massachusetts for urban affairs. Bob was recently named by Mass. Governor Francis W. Sargent to head a special task force to study the total intercity transportation picture in Mass., particularly relative to the development of a second jetport within the state... RICHARD T. DANN is a technical writer at United Aircraft Corp., E. Hartford, Conn. He resides in Columbia, Conn. . . Dr. DANIEL J. PENDER reports that he has accepted a position at the American Hospital of Paris (France) as resident physician... STUART D. BATSTONE received a master's degree

from Trinity Evangelical Divinity School in Deerfield, III., this past June. Stu has accepted a position as director of admissions at Barrington (R.I.) College, and is residing in Seekonk, Mass.

1964

Married: MICHAEL P. PENTI to Miss Jean C. Sinnamon of Australia on July 4, 1970, in Carver, Mass. Mike is employed by the J.A. Jones Construction Co. of North Carolina at the Salem (Mass.) Harbor Power Plant, and the couple resides in Salem.

Lt. WILLIAM R. PHILLIPS reports that he is currently a lieutenant in the Navy serving on the Staff CINCUSNAVEUR in London, England... PETER C. TROMBI recently received a PhD degree in mathematics from the University of Illinois. He has accepted a position as an adjunct assistant professor at UCLA... Air Force Capt. E. JAMES HANNA, III, is stationed at Malmstrom AFB, Mont... THOMAS J. MODZELEWSKI has been promoted to resident engineer-sales at Leeds & Northrup Co., Louisville, Ky... Army 1/Lt. FREDERICK H. SIFF is an instructor at the U.S. Military Academy, West Point, N.Y.

1965

Married: RICHARD N. BROWN to Miss Jane Archibald of Ashland, Mass., on July 11, 1970. Dick is a research engineer for the Naval Underwater Systems Center in Newport, R.I., and the couple resides in Newport... ROBERT K. DAWLESS to Miss Janice M. Skoda of W. Mifflin, Pa., on June 20, 1970. The couple is residing in Pleasant Hills, Pa.

DAVID S. CLAYTON has been admitted to the master's program of the Stanford Graduate School of Business... JOHN J. CZARNIECKI is a production controller for American Filter Corp. of Louisville, Ky., and is also pursuing a master's degree at Western Kentucky University... DONALD G. FRANKLIN is an accountant auditor in the U.S. General Accounting Office, Washington, D.C. He resides in Alexandria, Va...GERALD F. MORRIS has received his MBA from the Harvard Graduate School of Business, where he concentrated on financial analysis and corporate policy formulation. He is presently assistant to the treasurer of Textron Corp., Providence, R.I. He also serves on the evening faculty at the Graduate School of Babson College... Another recent recipient of a master's degree from Harvard is PHILIP B. RYAN, who also received a master's in business administration. He is employed by N.F. Bigelow & Co., a certified public accountant firm, of Manchester, N.H...

KENNETH W. BROWN is an engineer with the Raytheon Co. in Norwood, Mass., and is residing in Bellingham, Mass...JERRY CHIH-LI CHEN, MS, is a research assistant in the computer science department at the University of Illinois, Urbana, where he is working toward another degree in computer science... JOHN T. HART is employed in the medical electronics division of the Hewlett-Packard Co., Waltham, Mass. He makes his home in Norwood, Mass. . . JOHN P. JACOBSON is a graduate student in ocean engineering at the University of Massachusetts. Amherst...GEORGE LEMMON, III is a senior engineer with Ebasco Services, Inc. of New York City and is residing in Aberdeen, Ohio.

1966

Married: JOHN D. CUTHBERTSON to Miss Bobbyette McCoy of Sparta, Tenn., on September 12, 1970. John is a captain in the U.S. Air Force and is stationed at Griffiss AFB, N.Y... BRIAN N. BELAN-GFR to Miss Cynthia D. Koerner of Forestdale, R.I., on September 12, 1970. Brian is currently completing the requirements for a doctorate degree in electrical engineering at the University of Rhode Island, where he is a graduate teaching assistant. The couple is residing in Narragansett, R.I... GRANT P. MAIER to Miss Beverly L. Riley of Franklin, Mass., on June 20, 1970. Grant is a senior analytical engineer concerned with heat transfer, compressible flow, and fluid mechanics, at Pratt & Whitney Aircraft Corp., E. Hartford, Conn. The couple is residing in Manchester, Conn.

Born: To Mr. and Mrs. GEORGE R. STEVENS, a daughter, Laura Jane, on May 27, 1970. George is working in Raleigh, N.C.

STEPHEN E. ANDERSON is a project engineer with the Lee Co., Westbrook, Conn... ASHOK D. SHAH, MS, is a project engineer with Atlas Prestressing Corp. in Panorama City, Calif... Employed by the Calif. Div. of Highways as an assistant highway engineer, is ALBERT DIPIETRO. At lives in Mill Valley, Calif... STEVEN J. ERHARD is a project engineer with Applied Information Industries in Moorestown, N.J...PHILIP J. HOPKIN-SON is residing in Pittsfield, Mass, where he is employed by the General Electric Co. as a design engineer-electromagnetics. Phil recently received an MS degree from Polytechnic Institute of Brooklyn in system science, and he is also president of the Berkshire Chapter of the WPI Alumni Association...Army 2/Lt. DONALD McCARTHY is stationed in Washington, D.C. Don received a bachelor of arts degree in zoology from the University of Massachusetts in 1966 and returned to WPI where he completed his work for a BS degree in civil in 1969...SHELTON engineering WICKER, JR. has recently returned to civilian life after serving with the Army in Vietnam. He is employed by Public Service Co. of N.H. and resides in Londonderry, N.H., . ALAN W. MOKSU writes: "I have recently completed my active duty with the U.S. Army, and have accepted a position as mechanical engineer with Sanders Associates in Nashua, N.H." . . . Raytheon Co. in Bedford, Mass., employs LAWRENCE E. PIHL as an engineer... DONALD M. RUEF is employed as a field engineer by the General Electric Co., Philadelphia, Pa. He resides in Barrington, N.J... JOHN D. SHERRICK, MS, has been named an assistant professor in the Dept. of Science and Technology at Schenectady (N.Y.) Community College. John has spent the last six years at WPI as an instructor in the Electrical Engineering Dept... ROBERT S. STERNSCHEIN is a management trainee with the General Electric Co., Binghamton, N.Y., and is residing in Endicott, N.Y... Cornell University has awarded ALLEN A. SWEET a PhD degree, and he is now a senior research engineer with the Monsanto Co., St. Louis, Mo.

1967

Married: GEORGE B. DODSON, III to Miss Carol A. Proctor of Oxford, Mass., on May 29, 1970. George is an electrical engineer with RCA in Burlington, Mass. The couple resides in N. Chelmsford. . . DAVID P. KOKALIS to Miss Carolyn Rose Sparks of Green Hill, R.I., on July 18, 1970. Mr. and Mrs. Kokalis are living in Laurel, Md. . . Air Force Lt. RENE B. LaPIERRE to Miss Patricia A. Provoda of Holyoke, Mass. on June 5, 1970. Lt. LaPierre is a navigator stationed at Mather AFB, Sacramento, Calif. . . Army 2/Lt. ROY P. LINDQUIST to Miss Wendy J. Bisset of Viewfield Gardens, Aberdeen, Scotland, on June 26, 1970, in Scotland.

The Aluminum Co. of America employs PAUL S. HINKLE as an engineering purchasing agent. Paul resides in Mersinna, N.Y... The City of Medford, Mass., has named CHARLES J. SISITSKY as assistant planning director. Charlie received a master's degree in community planning from the University of Rhode Island in 1969...DWIGHT M. BAKER is a data processing systems analyst for the Vermont State Highway Dept., Montpelier, Vt... JOHN F. DOWNES is a sales engineer with the Fafnir Bearing Co., Detroit, Mich. He resides in Royal Oak, Mich. . . ANILKUMAR K. KADAKIA, MS, is an assistant project engineer with Urban Engineers, Philadelphia, Pa. . . W. M. Alford of Windsor, Conn., employs EDWARD F. LALLY as a project engineer...FRANK E. MAGIERA is employed on the staff of the Worcester Telegram & Gazette as a reporter. He resides in Dudley, Mass...Norden Div. of United Aircraft Corp. employs JOHN E. SHANAGHAN as a reliability engineer in Norwalk, Conn...GARY K. WILLIS is a sales engineer with the Bailey Meter Co., Boston, Mass. Gary lives in Mansfield, Mass.

1968

Married: ROBERT A. BALOUSKUS to Miss Betty J. Sharrow of Ansonia, Conn., on June 8, 1970, Bob is employed by E.I. duPont de Nemours & Co., Inc., and the couple will reside in Cedar Rapids, Iowa... Army 1/Lt. IVAN V. BEGGS to Miss Marlene Friar of Gibsonburg, Ohio, on December 29, 1969. Ivan is serving as an Army engineer with the 79th Engineer Battalion in New Ulm, Germany...JOHN C. DEMEO to Miss Suzanne C. Niedzwiecki of New Britain, Conn., on June 6, 1970. John is an analytical engineer at Pratt & Whitney Aircraft Corp. in E. Hartford, Conn., and the couple is residing in Middletown...GEORGE T. KANE to Miss Elizabeth D. Bahl of Towanda, Pa., on August 15, 1970. George is a technical assistant at Bethlehem Steel Corp., Bethlehem, Pa., and is doing graduate work at Lehigh University. . . GARY N. KEELER to Miss Linda Jean Collapietro of E. Longmeadow, Mass., on August 1, 1970. Gary is employed as a systems programmer in the computer center at WPI while working toward his master's degree in computer science...JAMES M. WENDELL to Miss Mary A. Reny of Fairfield, Conn., on June 20, 1970.

ARNOLD J. ANTAK has received a master of community planning degree from the University of Rhode Island and is employed by Howard, Needles, Tammen & Bergendoff, consulting engineers, in Boston, Mass...JOHN M. BURNS has been promoted to lieutenant junior grade in the U.S. Navy. He is presently stationed in San Diego, Calif...JOHN D. CUNIC is now working for Esso Research and Engineering Co., Florham Park, N.J. and is residing in Dover, N.J... RICHARD A. FORMATO is a graduate student at MIT in the Center for Space Research in the Electrical Engineering Dept. He resides in Lexington, Mass... Army 2/Lt. KENNETH A. GMINSKI writes: "After having a year and a half of fun while not completing the requirements for my master's degree in industrial engineering at the University of Rhode Island, I entered active duty status in the U.S. Army, having completed ROTC at Tech, I spent 9 weeks at the Armor Officer's basic course at Ft. Knox, Ky., before being stationed at Ft. Polk, La. At Ft. Polk I am the executive officer for a headquarters company"... WARREN L. ANDERSON has been commissioned a second lieutenant in the U.S. Air Force in ceremonies at Lackland AFB. Tex... NICHOLAS L. MAURO is serving with the United States Air Force in Vietnam...GEORGE R. SKOGLUND was recently awarded a master's degree in civil engineering by Colorado State University, and he is currently working as a civil engineer in Vicksburg, Miss... ROBERT L. SMITH is living in Burlington, Vt., and is employed as a systems engineer by the IBM Corp. in Essex Junction, Vt... NORMAN W. COOK, MS, is a graduate teaching assistant at WPI in the Physics Dept... Raytheon Co. employs RONALD E. DANIELSON as a systems engineer in Wayland, Mass. Ron lives in Shrewsbury... MESA, Inc., of Cambridge, Mass., employs KENNETH D. EKSTROM as an electronics engineer... Army Capt. DAVID A. FARR, MS, is an instructor in the engineering school at Ft. Belvoir, Va. . . THOMAS A. GELORMINO is a salesman for Vet's Explosives, Inc., Torrington, Conn... We have learned that RICHARD H. LANG is a design engineer with Vermont Research Corp., N. Springfield, Vt., and that he is residing in Claremont, N.H... Hazeltine Corp. of Braintree, Mass., employs ALLEN PALMER as an acoustic engineer...ROGER L. PHELPS is an experimental engineer with the Pratt & Whitney Div. of United Aircraft Corp., E. Hartford, Conn. Roger lives in Andover, Conn... ANDREW L. PIRETTI has been discharged from the Army after serving a tour of duty in Vietnam. He is living in Lenox, Mass... STEPHEN M. PYTKA is a development engineer with Bell Telephone Labs., N.J...Air 1/Lt. Force Whippany, RONALD D. REHKAMP is stationed with the Air Weather Service, Otis AFB, Mass. . . GREGORY H. SOVAS is an engineer with the New York State Dept. of Environmental Conservation, Div. of Air Resources, Colonie, N.Y... The location of DAVID J. WEINBERG is the University of Maryland, College Park, Md. David is a PhD candidate in biomedical engineering.

1969

Married: FELIX J. BARLIK, JR. to Miss Victoria C. Parkhill of Worcester, Mass., in June of 1970. Felix is a performance design engineer with Combustion Engineering, Inc., of Windsor, Conn...EDWARD A. MIERZEJEWSKI to Miss Theresa Tremblay of E. Albany, Vt., on August 22, 1970. Ed is a graduate student at Mass. Institute of Technology...JAMES P. MILLS to Miss Judith A. Matte of Uxbridge, Mass., on July 11, 1970. Jim is an engineer with Pratt & Whitney Aircraft Corp. of E. Hartford, Conn...RALPH C. PASTORE to Miss

Frances Galgani of Holden, Mass., on June 13, 1970. The couple is residing in New Haven, Conn., where Ralph is an electrical engineer with United Illuminating Co... STEPHEN O. ROGERS to Miss Heisson of Fitchburg, Mass., on June 21, 1970. Steve is employed by E.I. duPont de Nemours & Co... Inc. in Gibbstown, FREDERICK G. SPRETER to Miss Susan C. Anderson of Naugatuck, Conn., on June 27, 1970. Rick is a sales engineer with the Bailey Meter Co., Metairie, La., Army Lt. HENRY S. SWEET to Miss Susan Bryant of Centerville, Mass., on July 27, 1970. He is presently stationed at the U.S. Army Air Defense School at Ft. Bliss, Tex. . . PAUL S. WOLF to Miss Helen Rosenstein of Cleveland, Ohio, on July 19, 1970. Paul is employed by the District of Columbia Dept. of Highways and Traffic, Washington, D.C., WILLIAM A. BENSCH, MS, to Miss Anna DeLuca of Hartford, Conn., on June 13, 1970, Bill is a PhD candidate at WPI in the Physics Dept. . . STEPHEN SELINGER to Miss Barbara A. Bonetti of Milford, Mass., on July 11, 1970. Steve is an engineer in training with the Chevrolet Motor Div. of General Motors Corp., Warren, Mich.

Army 1/Lt, THOMAS L. CONNELLY is presently serving in Vietnam. He recently received the Army Commendation Medal for meritorious service as assistant post engineer and chief of the buildings and grounds division at Carlisle Barracks, Pa. . . ALFRED G. FREEBERG has been commissioned a second lieutenant in the U.S. Air Force upon graduation from officer training school at Lackland AFB, Tex. He has been assigned to Mather AFB, Calif., for navigator training... JAMES W. HAURY is employed by the Farrel Co. of Ansonia, Conn., as a mechanical engineer...DR. JOHN D. KUPPENHEIMER, JR., PhD, is employed by WPI as an assistant professor of physics. . . NAVY Ens. PETER E. NOTT is stationed in Norfolk, Va...Army Lt. JAMES L. RICHEY, JR. is currently stationed in Vietnam... Another recent graduate of officer training school at Lackland AFB, Tex., is EARL M. SPINKS. He has been assigned to Reese AFB, Tex., for pilot training... DONALD G. JOHNSON is director of camping for the New England Synod, Lutheran Church in America, Dedham, Mass... STEPHEN H. LEGOMSKY is an actuarial assistant with John Hancock Mutual Life Insurance Co., Boston, Mass... NAVNIT M. PANCHAL, MS, is a project engineer with Imperial Knife Co., Providence, R.I... Northeastern University employs RICHARD A. SHAPIRO as a teaching assistant in their Physics Dept... DAVID W. SWENSON is employed in Burlington, Mass. by RCA in their Aerospace Div. as an associate member, technical staff. Dave lives in Acton, Mass.

Married: GERRY A. BLODGETT to Miss Katherine A. Packard of Whitefield, N.H., on June 13, 1970... STEPHEN R. CROSBY to Miss Sandra D. Myrick of S. Windsor, Conn., in June of 1970. Steve is a graduate student at WPI...DAVID B. DAMER to Miss Cynthia E. Holt of Fairfield, Conn., on June 27, 1970. Dave is employed as a junior engineer by the United Illuminating Co., New Haven, Conn... HOWARD V. GOLDBERG to Miss Lynn P. Breitbord of Worcester, Mass., on June 14, 1970. Howard is employed by Ledgemont Laboratory, Lexington, Mass... JAMES G. HANNOOSH to Miss Linda A, Rugg of Marlboro, Mass. Jim is a graduate student in the Mechanical Engineering Dept. at MIT. . . ERIC W. HENRY to Miss Madeline C. Hunter of E. Brunswick, N.J., on August 8, 1970. Eric is employed by Whitman & Howard, Inc., Boston, Mass., as a sanitary engineer. . . ALAN M. KOLACZKOWSKI to Miss Marianne F. Sweck of Woonsocket, R.I., on August 8, 1970, Alan is a graduate assistant at Penn. State...PETER F. LALOR to Miss Mariellen J. Fitzgerald of Worcester, Mass., on March 15, 1970, Peter is a graduate student in the Metallurgy Dept. at the University of Connecticut. . . JAMES A. METZLER to Miss Linda M. Simmons of N. Attleboro, Mass., on January 16, 1970. He is employed as a mathematician by the government... JOHN C. SEXTON to Miss Karen F. Robidoux of Plainville, Conn., on June 20, 1970, John is a graduate student at UCLA... ROBERT J. GRILLO to Miss Rebecca L. Crosby of W. Acton, Mass., on June 20, 1970. Bob is a graduate student at the University of Connecticut in the city planning department... ROBERT KEENAN to Miss Gail M. Powell of Oxford, Mass., on January 31, 1970. Bob is an engineer with Western Electric, N. Andover, Mass., and the couple is residing in Methuen, Mass. . . CLARK A. KNICKERBOCKER to Miss Anne Thoubboron of Pittsfield, Mass., on September 5, 1970. Clark is located in Niagara Falls, N.Y., as a sales trainee with Chemical Hooker Corp...JOHN F. MALLEY to Miss Judith A. Szulkowski of Terryville, Conn., on June 27, 1970. John is a graduate teaching assistant at the University of Wisconsin in the electrical engineering department...PAUL E. MEDEI-ROS to Miss Cheryl J. Harris of N. Falmouth, Mass., on July 11, 1970. Paul is working for the New York State Dept. of Transportation in Poughkeepsie, N.Y., as a junior engineer. . . GEORGE R, SEAVER to Miss Marcia J. Armstrong of Plymouth, Mass., on June 12, 1970. George is a production engineer with Pratt & Whitney Aircraft in E. Hartford, Conn. The couple is residing in Glastonbury, Conn... JAMES W. SMALL to Miss Suzanne T. LeDoux of E.

Brookfield, Mass., on June 14, 1970. Jim is a graduate student at Cornell University, Ithaca, N.Y.

DAVID D. ANDRE is a mathematics teacher at Northbridge (Mass.) High School...ROBERT A. ANSCHUTZ is a graduate student at WPI...JAMES F. BAGAGLIO has been sworn into the Coast Guard and has gone through basic training May, N.J... ERNEST Cape Α. CARROLL is a second lieutenant in the U.S. Army... The University of Illinois has DENNIS F. DAMICO as a graduate assistant...PETER J. DENONCOURT accepted a position with Goodyear Tire & Rubber Co. and is residing in Concord, Mass... ANDREW M. DONALDSON is a graduate student at Stanford University... In the primary elections in Rockland, Me., DAVID F. EMERY unseated the incumbent candidate for the GOP nomination for the Rockland House seat. . . GARY F. FRITZ is employed by the Edgartown (Mass.) School System as a math teacher in their junior high school... JOHN H. GARRITY, III has accepted a position with Maine's Yankee Atomic Power Plant... RONALD GRZELAK was commissioned a second lieutenant in the U.S. Army on August 13 upon successful completion of a six-week reserve officer training corps program at Indiantown Gap., Pa. . . Also commissioned in the same ceremonies was JOSEPH D. HANSEL... Raytheon Co. in Sudbury, Mass., employs PAUL D. HIMOTTU... HARRIS C. HOWLAND is a field engineer with the General Electric Co. in Baltimore, Md... Connecticut Light & Power Co. employs DANA L, LOUTH ... Continuing at WPI working toward an advanced degree is JOHN J. LYONS. . . TIMOTHY J. MACKIE has accepted a position with Eastman Kodak Co... JEFFREY C. MANTY has accepted a position with Bethlehem Steel Corp...General Electric Co. has hired MASON B. PECK... An employee of Camp, Dresser & McKee is ALAN S. PRUCNAL... A master's degree candidate is DAVID A. QUAGLINI, JR., who is located at Penn State. . . BRUCE S. ROBIN-SON has accepted a position with Western Electric Co...LOUIS W. ZITNAY has accepted a position with Turner Construction Co. of New York City. . . PHILLIPS C. CROCKER is a junior engineer with the New York State Dept. of Transportation and is located in Poughkeepsie. . . WILLIAM J. HAKKINEN is a production development engineer with Chas. Pfizer & Co., Inc., of Groton, Conn. He is living in New London... The Dow Chemical Co. has announced that DAVID L. VALCORE has joined their company and is with their chemical engineering laboratory, Midland, Mich.

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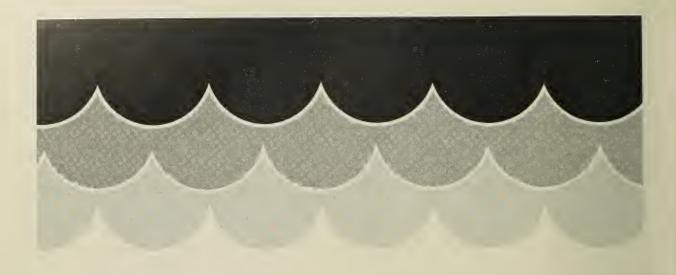
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VOL. 74, NO. 2 SPRING, 1971





Wyman-Gordon This new research center, located on Grafton Street, Millbury, was opened in January. This new facility reaffirms Wyman-Gordon's position as the trail blazer in applying advanced metallurgical science to metalworking problems. Wyman-Gordon, unique in its technical leadership, operated the first metallurgical laboratory in the Forging Industry. Now these modern facilities add new depth and dimension to the Company's continuing research and development program designed to solve current problems and to probe the future for new processes, new markets.



ШРІ journal

'ol. 74, no. 2 pring, 1971

I. Russell Kay

ditor

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Your Class and Others
Directory of Chapter Officers

A Letter FROM the Editor

THIS ISSUE marks a new phase in the history of the WPI Journal. The production of the Journal is now being handled by the WPI Public Relations Office in connection with the Alumni Association. A new office for the magazine — and a new editor. As the new Director of Publications at WPI, I will have responsibility over the detail work that goes into each issue. Working with me will be Stephen J. Hebert, '66, Assistant Alumni Secretary and previous editor; Walter Dennen, chairman of the Alumni Publications Committee; and the staff of the Alumni Association, who will continue to compile the Class Notes and various other sections of the magazine.

Over the next few issues, we intend to make a concerted effort to improve the readability and appearance of the magazine. We are working with the printer to upgrade the quality of reproduction of photographs. We are going to try to increase both the quantity and interest of the news about your fellow alumni. One of the ways that you can help us serve you better is to let us know what you think of what we're doing. We would like to institute, on at least an occasional basis; a *Letters* section where we can give expression to *your* reactions to articles, alumni activities, and campus happenings. It's your turn now.

I feel that you should know a bit about your new editor especially since (a) I'm not a WPI alumnus, and (b) my background is not, in fact, particularly technical. More complete details are given on page 28, so let me just say here that I have been an editor, photographer, and designer since I graduated from the University of Chicago in 1965.

I came to WPI from Northwestern University, so I have no sentimental attachments to WPI to influence or distort my first impressions of the campus. I am frankly excited about the atmosphere of innovation and getting-down-to-the-things-that-really-count that I find here. The students here reflect a concern for the social, environmental, and human problems that one is accustomed to seeing at a liberal-arts school; but they do this from a solid base of *technical* knowledge — knowledge of technology — that is so often lacking in liberal-arts students, and which gives them unique capabilities to work for meaningful change. . . real progress, not just higher technology and fancier gadgets. Furthermore, the WPI PLAN has got to be one of the most important things happening these days in the entire field of scientific and technical education — if not education in general. I am proud to be associated with WPI, and you should be too.

Finally, let me repeat that this is your magazine, and we want to hear from you about your reactions to it.

Russellkay

THE EDUCATION OF THE IDIOT BOX

the use of television at WPI

by Kenneth E. Scott and Russell Kay

NE OF THE MORE INTERESTING and exciting teaching innovations on the WPI campus has been the introduction of television, both live closed-circuit and videotape. It all began in the fall of 1968 as a practical solution to the problem of scheduling freshman chemistry lectures for the 650 entering students - a much larger freshman class than ever before. With no single hall both large enough and properly equipped, closed-circuit television was the best answer. Now, chemistry lectures originating in Kinnicutt Hall may be viewed in other lecture halls on campus, which are connected by coaxial cable. Each hall, including the main lecture hall, is equipped with a number of TV monitors. Besides the fact that more students can attend each lecture, all students can now better observe the lecturer's demonstrations and experiments, thanks to the camera's close-up capabilities, regardless of where in the hall they sit.

The use of TV on campus primarily as a prerecorded medium began about the same time. Dr. Richard Stewart, then of the Mechanical Engineering Department, was experimenting with the preparation of tapes for his courses in thermodynamics. Dr. Stewart left WPI in June 1969. Prof. Kenneth E. Scott of the Mechanical Engineering Department, who was interested in using television to supplement his courses in control engineering, decided to take up where Dr. Stewart had left off.

He decided at that point that WPI should stick with ½ inch videotape. With an initial equipment budget of \$3500, Prof. Scott purchased a Sony videocorder, two cameras, and ancillary equipment. This supplemented the single recorder and camera (now obsolete) that Dr. Stewart had used. A tiny office in Higgins Laboratories was turned into a "studio," and Prof. Scott began producing tapes for his courses.

Kenneth E. Scott is Professor of Mechanical Engineering. Russell Kay is Director of Publications. The success of this small venture, together with increased skill and facility at handling the equipment and tape editing, led Prof. Scott to offer help to anyone on campus who wanted to try using television in his teaching. Several faculty members took him up on this, and Prof. Scott has produced some 30 different tapes, ranging from the wrestling team in action to "How to Operate the Radiation Analyzer."

THE HOW-TO TAPES

This last typifies a large class of tapes, which provide personalized visual instruction in the operation and use of a particular piece of equipment. Perhaps the most successful and most used tape to date teaches the use of the TR-20 analog computer, which is used by all students taking courses in control engineering. Although instruction manuals are available and each student has had instruction in programming and operating the computer, a number of questions invariably arise, particularly in such details as patching the boards, setting potentiometers, etc. The videotape answers all these questions, and a television monitor and playback unit are always available in the laboratory next to the computer. A student can choose to view the tape just before he begins patching a board and/or operating the computer, or he can go ahead and get started and then use the tape to find the answer to a particular question that may come up as he proceeds. The tape is indexed so that a student doesn't have to view the entire reel to answer a single question or to review a small point. The student merely uses the fast-forward or rewind controls to select the particular segment of the tape he needs.

Instructors are available during normal hours to help students with the computer. The videotape, however, doesn't need sleep, or even overtime pay, and the availability of the tape to the students has now allowed the ME

department to keep the computer laboratory open 24 hours a day, thereby increasing the efficiency of use of the computer and also giving each student more opportunity to use it.

Similar tapes have been done for the use of the teletype computer terminal and the 029 keypunch.

By far the most ambitious production of this type that has been done is "An Introduction to the Gordon Library." No longer is it necessary for the librarians to conduct group after group of freshmen on an introductory tour of the library and its facilities. Instead they are shown the tape, which was shot on location. An additional advantage to both the library staff and the students is that the tape is always available for viewing. Additional tapes for the library, such as "How to Use the Chemical Abstracts," are in process or planned.

All tapes are used by students on a "hands-on" basis. Although there were some initial reservations about possible damage to the equipment, these were completely groundless. At present there are two viewing stations on campus: Higgins Lab and Gordon Library.

STUDENT USE

Students are becoming more and more interested in using the television facilities on their own. Over a year ago, students enrolled in the English Department's course in oral communications, initiated by themselves the taping of oral presentations at scheduled class times. Today the use of television is an integral part of the course, as important as was the audio tape recorder before it. Each student is able to view his own presentation with his instructor, and the instructor's critiques are then especially helpful.

In another area, a group of students taking a history course prepared a short documentary tape. They found that this novel effort, if not exactly painless, was far more rewarding and motivating than a term paper or a test could have been. Several students spent four days during the midterm recess preparing a televised political advertisement supporting their candidate. This was done as part of a course in government.

TV AND THE TEACHER

But the most far-reaching uses of television, right now, are by the faculty. Prof. Harit Majmudar of the Electrical Engineering Department put on tape all the lectures for his fall course on power systems. The tapes are now available in the library whenever the student wishes to view them. This has enabled Prof. Majmudar to use his entire class time for discussing (as opposed to presenting) the material, talking with students individually, and giving tests to pace their learning. He divided the course into "blocks," and by his testing procedure was able to let each student proceed at his own pace. This approaches a programmed learning system. But more importantly, it means that the teacher doesn't have to use valuable class time to present his lectures. It gives considerably more individuality to the system, and even though most people tend to think of television as extremely impersonal, just the opposite turns out to be the case in practice. The instructor can now have a relatively large amount of scheduled time for meeting and consulting with his students, and he is able to deal with specific problems and individual students in greater detail and with greater effectiveness.



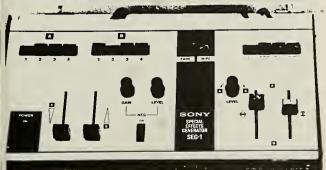
Another advantage to videotape is that it eliminates a number of scheduling problems. If for some reason a student can't get to a lecture, there is no way he can recover that under the traditional system. But if the lecture is on videotape, the student can simply go to the library whenever he is able to, morning or night, and make up the lecture. And there is the further advantage that the student can review lectures directly. He can stop a lecture at any point. He can go back and repeat parts of it until he is sure that he understands the material. These advantages are so great, and the potential and acceptance of taped lectures so good, that additional viewing stations are now planned to accommodate the increased use of television tape at WPI.

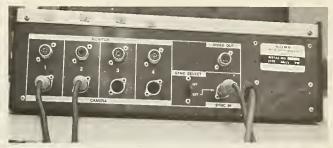
Another use for the taped lecture or course is to provide instruction at remote locations. This has been done for graduate and/or evening programs by a number of schools (Colorado State University, for example) with considerable success. The tapes are sent to the instruction site, the students view them as their schedule permits, and the instructor visits the site periodically to meet with the students and discuss the course work. This greatly increases the access of graduate and extension courses to those who are employed relatively far from the school; and if a student misses a class because he is traveling or is out in the field temporarily, then he can make up the work on his return.

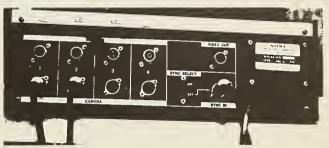
NUTS AND BOLTS

Prof. Scott's initial decision to stick with the ½ inch tape format has proved to be quite sound. Those reasons were basically economic, as 1 inch recorders were then some four









times as expensive as ½ inch models and tape costs were double. Recent advances in technology, however, have narrowed the quality differences between the two sizes. The current system uses 350 scanning lines (compared with 525 for commercial television), and produces an excellent image quality. WPI now has four ½ inch recorders and three cameras, plus a special effects generator which allows sophisticated switching between cameras, dissolving or "wiping" between one camera and another, and split-screen effects. Our two latest recorders are of a new type, compatible with 26 other brands and models of video recorders.

Until just recently, virtually all the taping done at WPI was done on location, whether at the library or in a professor's office. The "studio" mentioned before was just about big enough to store the equipment, and no bigger. But now a large basement room in Higgins Laboratories has been converted to a classroom-studio. A larger room with fluorescent base lighting providing a minimum of 150 foot-candles of illumination, the new studio (quotation marks no longer needed) provides enough room to hold an entire oral communications class, for example, and to provide semipermanent setups for the taping of lectures and other presentation-type material.

One promising and creative approach to the television medium now being tried is a format using three cameras. One is suspended from the ceiling over the instructor's head and is used to photograph drawings and equations. In effect, this replaces the blackboard with a notepad. A second camera is focused on the instructor, so that he may appear on screen — or in a corner of it. The third camera would be trained on the class, with a wide-angle lens. Microphones and special effects allow interaction between the class and the instructor, thus directly involving the students in the television system.

THE WPI PLAN

As we here at WPI proceed with the implementation of the WPI PLAN, there will be a greatly increased use of TV tapes as a means of information storage and presentation. The new approach to teaching controls engineering, for example, involves the use of individually prescribed instruction and will depend heavily on television as a means of supplementing the text and other programmed learning materials. By using the split screen, with the instructor appearing in a corner of the picture, we hope to provide a more personal approach to the videotape medium. We will prepare many short, supplementary tapes, after the fashion of the keypunch and analog computer tapes.

Under the WPI PLAN, emphasis is being put on the individual student — his needs and his responsibilities. The use of television will enable both faculty and students to make more effective use of their time, and it should, ideally, free a considerable amount of faculty time which can then be used to guide and counsel students individually.

BEYOND THE BOOK ...

Commercial television is called many names, mostly bad: the boob tube, the idiot box, and Newton Minow's famous "vast wasteland." Television at WPI is quite another thing. It is an educational tool par excellence, and we are only beginning to tap its real potential. But from what we have seen so far, this may be one of the most revolutionary devices ever. By combining the availability and personal access which characterizes the book with the action, demonstration and "presence" of personal instruction, television as a teaching and "library" medium may ultimately have as much impact on our lives and our schools as did the introduction of the printed book. At WPI we presently use reel-to-reel videotape, because it is the only system now available and because it allows a great deal of flexibility in editing. In the not very distant future, we may find ourselves converting, for playback purposes, from videotape reels to videotape cassettes, which Sony and others are now developing; to CBS's EVR system, which stores electronic television images on motion-picture film; or even perhaps to RCA's SelectaVision, which uses laser beams to reconstruct holographic images. But whichever direction the technology takes, the important fact is the concept of stored, readily available, televised instruction. This is the next step beyond the book. It's a real revolution... and we're a part of it.



On to the WPI Plan

a progress report

An interview with Dean of Undergraduate Programs William R. Grogan, the man directly involved in implementing the WPI PLAN.

Dean Grogan, how far along are we toward the new WPI PLAN?

At the moment we have established several major faculty activities and are working on various aspects of the PLAN. These include:

- A program which involves most of the faculty in the development of the projects and independent studies.
- 2. The development of the new study and study-conference methods of teaching in 7-week terms.
- 3. Development of the Intersession program, which may involve between 100 and 200 separate topics.
- 4. Development of a completely new advisory system.
- Development of audio-visual support, including especially the TV studio and taping facilities (for more information on this, see the article on page 4), and more and better library facilities and materials.
- 6. Planning for best use of facilities and equipment. This involves change from many traditional laboratories, where a number of students do the same thing at the same time, into a system where each student may be working on a different project. There will be quite different requirements for equipment and for space utilization than we have seen in the past.

The PLAN is scheduled to begin next fall, isn't it?

We will be operating under an "interim" calendar starting next September immediately after Labor Day and finishing the semester before Christmas vacation. How long will it take to completely implement the PLAN, and briefly what is the timetable for the various stages?

It will take approximately seven years until the PLAN is fully implemented. For the classes entering in the fall of 1971, 1972, and 1973, there will be the option to pursue the BS under either the traditional degree requirements or those of the PLAN. In the fall of 1974, all entering freshmen will be under the PLAN. The new calendar will begin next fall, 1971, immediately after Labor Day, finishing the semester before Christmas vacation.

In the fall of 1972 we will introduce the 7-week terms, so that the 1972-73 school year will have two 7-week terms in the fall, the 3-week Intersession in January, two 7-week terms in the spring, and finally an optional 7-week term in the summer. This calendar will hold for all students, whether they are pursuing their degrees under the PLAN or not. For those students under the traditional program, the two 7-week terms in fall and spring will be the equivalent of two current 14-week semesters.

About the Intersession — is it designed to be organized around a single general subject or area of investigation, or will it be more diverse?

We have suggestions from the faculty for about 200 different topics, and we are now going to ask students for suggestions. In addition, we have already established an advisory committee composed of members of the local community, including some alumni of course, representatives of the Art Museum, the Science Center, local businessmen, and others. This committee is suggesting both

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possible topics and people who might speak or otherwise participate in the programs.

We estimate that there will be somewhere between 100 and 150 topics offered. We hope to have available next October a sort of "mini-catalog" listing the Intersession topics so that students can register for them. There will be a considerable variety and diversity to these topics. Some, for example learning a new computer language, may have as many as 100 students enrolled. More specialized subjects, such as the state of the art in integrated circuit technology, might have only a few students.

We hope that alumni with expertise in certain areas may wish to participate with our faculty in the presentation of some state-of-the-art type programs. Also there may be alumni who would like to participate as students, with upperclass and graduate students, in taking part in one of the seminars. Alumni have often asked how they can come back to the college to learn something. This seems to be an ideal way to participate back on campus in some specialized learning experience.

So the Intersession isn't an overall kind of thing, with everyone studying the same area, or even the same sort of topic, for the whole three weeks.

It might be possible for a student to take his three weeks in one area by selecting his three topics accordingly. We expect that some students will do this, because such related topics will be offered. On the other hand, we want to have the Intersession be an exciting and interesting period, so that if a student wishes to study an aspect of advanced technology for one week, he can do it; and if he wants to investigate the philosophy of a certain author, under the guidance of the English department and with appropriate advanced readings, then he can do that for another week. We want the Intersession to do several things: to offer study in areas that are too specialized to warrant a normal-length course; to offer things that are frankly experimental, both in subject and in method of presentation; and to provide some welcome variety to the student and faculty programs.

Will the Intersession use the same sort of daily schedule as the regular term?

The currently considered format for the Intersession will have a concentrated three-day program each week, starting Tuesday morning and ending Thursday night, including evening sessions on Tuesday and Wednesday. This is experimental. This format can do two things: it will provide long weekends, to give people time to do advanced reading, or go skiing, or whatever they want; and second, it will greatly facilitate the participation of off-campus people—such as visiting scholars and members of the industrial community—either as students or as teachers.

Faculty advisors will have a most important role to play in making the PLAN work well. Can you tell us a little about the advisory system?

A student will at all times have an advisor, but it may not be the same person through all four years. This depends on a number of factors: the compatibility of the student and his advisor, for example; and in some areas where a student has a well-defined interest, he may on his own find an academic advisor who shares that interest, and the student could then be officially transferred to that advisor. We are doing this to some extent now, when a student transfers his major from one department to another.

There may turn out to be three classes of advisors. One would be a personal type of advisor, who will stay with a student to be responsible for following his progress. The student may have an academic advisor who will help him structure his program in his major field of interest. Finally, there may be another informal advisor, who will help the student in his minor field.

I understand that you want most of the faculty to be involved as advisors under the PLAN.

Yes, we will need the great majority of the faculty involved in the advisory program. Perhaps between 65 and 80 percent of the faculty will be advisors.

What sort of preparation do the faculty members have for advising?

I believe that we have enough capable faculty to be advisors, but many have not had much experience in academic advising. One of the major tasks now in the implementation phase is the preparation of adequate supporting material and orientation programs for the advisors so they will be sufficiently knowledgeable.

How will the advisory program be coordinated and brought to some sort of standard?

President Hazzard has recently appointed Professor John van Alstyne to the position of Dean of Academic Advising. In this role he will be responsible for developing and directing the advisory program of the college. He will have responsibility as Executive Director for the Council of Advisors, a group of faculty who will try to establish standards for the academic advising program. We have had an advisory implementation group formed this fall, and they will continue to operate while the program is under development.

Dean Grogan, a few questions about the actual operation of the PLAN. First, what are the degree requirements?

The degree requirements are, first of all, satisfactory completion of a comprehensive evaluation in the student's major field. Second, a qualifying project is required in the student's major area at a high level — that is, a level expected of a baccalaureate degree candidate. Finally, and this is a unique feature, the satisfactory completion of a qualifying project indicating that the student is aware of the *implications* of technology. That is, can he relate his major field to social areas demonstrating the understanding of the effect that decisions that he makes in his major field can have on the economy, on the environment, and, sociologically, on people around him? This is extremely important if we are to educate people who can use technology for its proper ends.

What about the comprehensive evaluation? What will this be?

This is not a three-hour written examination upon which everything succeeds or fails. The evaluation is far more sophisticated than that. First of all, I must explain that during the academic year there will be two weeks set aside, at various times, for comprehensive evaluation. It is anticipated that the comprehensive examination will be based largely on a comprehensive problem which the student will have two or three days to solve. His written report will be carefully read, and then he will have oral interviews with professors and also, where it is appropriate, with an evaluator from outside the WPI campus - members of the professional community or of the academic community from other institutions. Should a student be found deficient in some general area of knowledge which is appropriate to his major field, it would then be recommended that he take certain coursework to reinforce this background. He would then be eligible to come up for



comprehensive evaluation when it is next given. The idea is to be certain that the student is prepared at a *professional* level and with knowledge and competence to qualify for a BS degree. What we are saying in the WPI PLAN is that a degree from this institution should be based upon demonstration of knowledge and competence, but in the process of gaining that knowledge and competence there may be various paths appropriate to the interests and intellectual ability of our various students.

Much emphasis has been placed on the project aspect of the PLAN. In reality, how much of each student's work will involve projects and how much will be courses?

The PLAN requires that each student perform two qualifying projects consisting of two units. If these two units are out of the normal sixteen, then we can expect that the student will have as a minimum 12½ percent of his effort in project work. This might well be expanded in preliminary or preparatory projects up to a probable maximum of 25 percent. We anticipate that most students will take somewhere around 15 to 20 percent of their work in project areas and the rest in coursework.

What sort of response have you had from industry regarding the project aspect of the PLAN?

Almost every industry that we have contacted has shown an interest in participating in the program. This varies, of course, with the personal interest of the managers or company presidents involved. One local company developed, in two weeks, a list of thirty possible projects that we could do in their area alone. Recently, a large government laboratory expressed an interest in establishing an Internship Center at their location. Industry in general has responded that WPI's idea of *internship*, of having students solve real problems, makes a great deal of sense.

Do you think that part of the reason for this support is that activities like the Clean Air Car Race (see the Winter 1970 *Journal*) have shown that students can really accomplish something?

Definitely. There is some skepticism about a student's ability to make a significant contribution, but experience with some of our activities, like the Clean Air Car Race and the current project aimed at stopping the pollution of Salisbury Pond, has shown that with the right challenge, and with the right sort of advisory support, students are extremely imaginative, resourceful, and able to apply their knowledge in really useful ways. Further demonstration of this fact should be available as 23 students undertake our first 10-week summer off-campus internship under the Sloan Foundation assisted Environmental Systems Study Program.

Dean Grogan, when do you expect to establish the first Internship Center, where students will be able to carry out project work off-campus?

I don't know for sure, but we hope to have a limitedcapacity center going next year, and the year after we hope to have the formal Internship Center program established.

You have to remember that the recession has slowed down our development in that area. The resources that industry has are stretched pretty thin, and they are not able to make the commitments that they might have made a year or so ago. Thus it will take a while longer than we had originally hoped to get the internship program firmly established.

Speaking of the recession, what about the funds required to implement the PLAN?

There are several types of expenses involved here. One is the extra salaries for the people who are doing the redesign of the courses, the studies and study-conferences, generating projects, and so forth. It will take overtime work and work during the summer. We have asked all the faculty to contribute, at no pay, two weeks of their time during this coming summer to help the implementation. In those cases where the work in the department, and for the college in general, will exceed that limit — and there will be a number of such cases — then those faculty members will be compensated for the excess time.

Other expenses involve bringing outside consultants to the campus, and then there are costs for renovating certain facilities and buildings, additional costs for upgrading the library, and the cost of new and more equipment — for example, more videotape players... and more videotape. Because these costs are involved in implementing the PLAN and are generally one-time-only in nature, we hope to get some support from philanthropic and educational foundations.

What will be the outlook for the student who gets his degree under the PLAN? That is, do you anticipate problems with industry when our students are looking for jobs?

From all evidence at hand now, there should be no problem for any of our students to find employment in industry upon graduation. Although each student's evaluation will not contain a quality point average, it will contain an indication whether each course taken was completed acceptably or with distinction. It will contain the topics the students have studied during Intersessions, and, most important of all, it will contain a written summary by the chief project advisor on the two qualifying projects. This would be extremely helpful to any prospective employer in evaluating the potential of the student for the type of position he might have in mind.

What about graduate schools?

The same situation should apply there, because we will be offering information over and above what we now have regarding a student's ability to do research, in the case of a scientist, or, for an engineer, how he can apply and integrate the total body of knowledge that he has at hand. One of the important criteria for graduate school admission are recommendations from faculty members. Because of the more intimate association our faculty members will have in the project and independent study phase of our program, they should be better qualified than ever to provide the necessary information to the graduate schools. While the transcript will be somewhat different than what we have been used to, this should be no real impediment. All colleges are used to reading transcripts which have different rating values - for example, the many transcripts we receive from European and other countries for students applying to graduate school.

Finally, Dean Grogan, how will the PLAN affect the potential for alumni involvement?

Alumni involvement should be considerably increased when the PLAN is in full operation. One of the primary purposes of the PLAN is to break down walls between the campus and the community outside - to build bridges between them. Since alumni form a very valuable resource in the professional community, it would follow that their involvement with our "real-life" problems and situations should be greatly increased. Specifically, there are two areas where we now actively solicit alumni suggestions and participation. One is in the Intersession programs, as I have described earlier. The second way alumni can help is by assisting us in obtaining and carrying out off-campus-oriented project work. We hope that, in the near future, we will be able to supply you with additional information as to how alumni may participate in such programs, through subsequent Journal articles.

The Miseducation of the Artist

by Joseph C. Landwehr

Winner of the 1970 Wat Tyler Cluverius Prize

TRADITIONALLY, the artist has been forced to play the role of a witty fool in American society. Since the middle of the nineteenth century, America has been preoccupied with its industrial and technological expansion, creating an economically wealthy but culturally impoverished nation. Art cannot be called production in the usual sense, nor can it be valued adequately on a monetary scale, yet Americans have tried to do both. Consequently, the artist has been forced to sacrifice creativity for marketability in order to survive.

The true American artist has died, while his commercial counterpart has been offered in his place, presenting a poor substitute at best. These commercial artists have made American art synonymous with entertainment while providing mass escapism from the pressures of a technologically oriented society. Mass appeal has replaced creative ingenuity as the criterion for artistic success. The would-be artist in this Philistine society of ours is faced with one of two alternatives: either he can appeal to the commercial market, in which case he will be well rewarded financially; or he can retreat to his ivory tower, where he will perhaps create true art, but will starve in the process.

What Americans have failed to realize is that by degrading art to the status of mere entertainment, we are

Joseph C. Landwebr is a senior, the first candidate for the BS in Humanities and Technology in the English Department, with high honors. He is editor of The Zig-Zag Papers, a WPI student literary magazine.

ignoring the prophetic value of the artistic vision. The poet is the only one sensitive enough to maintain the psychological equilibria in our hectic existence; the painter and sculptor are the only ones observant enough to catch the true reflections from our churning waters. Because he is the only one with the perspective to understand the consequences of our present technology, the artist is the only one equipped to prepare America for life in the electronic age. Just as America has seen the marriage of the scientist and the engineer to serve the industrial age, so too will he see the marriage of the artist and the scientist to serve Marshall McLuhan's global village. Because America has failed to recognize the necessity of this union, the artist has continually been forced to play the clown.

One major consequence of this attitude has been the increasing irrelevance of American education, especially for creative students. The attitudes on which our educational system is based have become obsolete with the invention of the computer and the dawn of the electronic age. Let us take a look at these outdated attitudes and their consequences for the artist.

The entire educational system in this country is geared toward increasing the economic marketability of its students. Our colleges and universities are generally not designed to educate, but to ensure an easier, better paying job to those students who can tolerate the system for four or more years. Similarly, our elementary and high schools are designed to provide raw material to the colleges. As a result, those students who are seriously interested in

educating themselves have become disillusioned with traditional academic life.

Because every child born to financially comfortable families is expected to one day enter college, where the work load will demand a highly developed reading skill, early literacy is stressed, both at home and in school. This has the detrimental effect of teaching the child to separate the imaginative, emotional, and sensory aspects of experience, consequently destroying the totality of his artistic perspective. Furthermore, the emphasis placed on such subjects as arithmetic, spelling, grammar, and vocabulary teaches the child to think according to pre-established rules. Understanding is achieved at the expense of appreciation and imagination.

Perhaps the most destructive consequence of our job oriented educational system is the competition it fosters between students. Grades often become the substitute for the abilities they are designed to measure. More often than not, the students with the highest grades are the ones most competent in beating the system. For the would-be artist this is disastrous; instead of being taught to cooperate with other artistic minds to the end of greater creativity, he learns to isolate himself and mistrust outside influence.

The second point of obsolescence we must examine is the discrepancy between the information transfer systems of the industrial age, on which our educational system is based, and those of the electronic age, in which our students are born. In the industrial age, the printed word was the primary means of information transfer. Then it was sufficient that the information transferred homogeneous, but the students of today are growing up in an electronic age, where information is transferred instantaneously and, as such, creates an increasing degree of identity between subject and object. Thus today's education must be participatory as well as homogeneous. Books and lectures no longer provide relevant instruction because they are not participatory. They require the use of one sense only (the visual and the auditory, respectively), and consequently complete participation is not achieved. The result is an increasing degree of restlessness and boredom among students.

The third obsolete attitude perpetuated by American schools is that of American supremacy. Our education is geared toward acceptance of the American way of life. Other cultures and heritages are given secondary importance and are studied with a somewhat condescending attitude. In an industrial society, such nationalism is understandable, but in an age of instantaneous communication and world-shrinking transportation, it is not only obsolete, but absurd. Students are encouraged to conform to the American way, but being born in a global village, they rebel and seek the opposite extreme. This rebellion is

even more marked in the artist, whose commitment is to mankind and who is more inclined to experiment with new ways of life than are other students.

These attitudes of economic orientation, nonparticipatory educational methods, and American nationalism combine to discourage intellectual cooperation, stifle creative innovation, and breed boredom and apathy. The would-be artist is finding it increasingly difficult to develop in such a stifling atmosphere. He is forced to leave the educational system and supervise his own growth. Those that remain behind generally feel trapped and discouraged. Why should artistic people be forced to bear the consequences of a faulty educational system? The artist is the only one capable of preventing America from becoming a slave to its own technological advancement; he is the only one equipped to guide America safely through the electronic age. The sooner we realize this and begin to provide for the education of the artist, the sooner we will begin to control our own destiny. The following are a few proposals for this artistic education.

The first and most obvious changes to be made are in society's attitudes towards the artist and his creation. Art must be encouraged for its aesthetic value alone and not for its commercial salability. The artist must be hailed as the prophet of the electronic age and exonerated from his role as an entertainer. Finally, society must be willing to embrace the artist's commitment to mankind and cease its encouragement of American nationalism. When, and only when, these new attitudes become ingrained in our society, the artist will be able to coexist with our educational system, and changes can be made to keep creativity alive.

Grades must be abolished on all levels of education. The progress of each student should be discussed periodically by the faculty, and advancement should be according to ability rather than age. At the same time, cooperation must be encouraged in such a way that each student participates and none becomes parasitically dependent on the group. "Cheating" should be allowed, provided it is a mutual process.

The trend toward earlier and carlier literacy must be reversed. The early years of education should be conducted orally, thereby creating a greater degree of student participation and, at the same time, teaching the student to embrace the totality of experience. During the oral phase of his education, the student should be trained in sensory awareness and aesthetic appreciation. He should be taught to express his emotions openly and to recognize these emotions in others. Perhaps sensitivity training could be employed to accomplish this, while at the same time increasing the student's human compassion and social commitment. This oral phase of education would be invaluable in instilling artistic sensitivity and perspective in our students.

At the same time, these students must be taught to express themselves creatively, without fear of breaking pre-established rules. They must not be burdened with prescribed value systems, but must learn how to critically form their own. Above all, they must be taught to assert themselves existentially in the face of opposition. To the artist, this would mean learning to experiment with form and structure, as well as style, resulting in greater diversity of creative endeavor.

Maintaining these practices throughout elementary and high school would assure that the creative spirit would survive in artistic children. The traditional three R's could be postponed for a few years, when their introduction would not delimit the young artist in any way. A logical extension of this program would be to establish colleges explicitly for the purpose of further developing creativity.

With healthy attitudes toward art instilled in him and his natural creativity still intact, the young person graduating from high school would be able to seriously consider devoting his life to artistic endeavor, without feeling the need to have a more concrete career to fall back on. The present-day liberal arts education would no longer be sufficient for this new breed of strongly committed artists. The artistic education would provide for the artist what the technical education provides for the engineer, while at the same time reducing his feelings of alienation and disillusionment towards the educational system.

The artistic college should be loosely structured to provide maximum freedom and room for creative expansion. Books, classes, and lectures should be replaced, as much as possible, by independent study under professional guidance. This should be supplemented by small informal discussion groups, comprised solely of students at various levels of development, and creative workshops, designed to encourage interplay and cooperation between artists in different fields. The students must be free to explore any field of interest they wish, while at the same time determining their own course of education. Close association with a faculty, preferably composed of professional artists, on both an academic and social level, would provide more highly developed creative influence and guidance.

One area in particular in which the faculty should exert their influence is in soliciting the artistic vision from inner consciousness. If we compare the mind to a pot of boiling water, thoughts can be considered to be the tiny bubbles forming at the bottom of the pot. As these thought bubbles rise, they become larger and larger until they burst at the surface of the water. Normally, we perceive our thoughts

only when they reach the surface, but the artistic vision is perceived much closer to the bottom of the pot, which represents the source of thought in this analogy. Thus if the artist were taught to perceive thought at lower and lower levels of consciousness, he would benefit immeasurably.

The best method of accomplishing this is through transcendental meditation. The use of hallucinogenic drugs will also take one closer to the source of thought, but the resulting state of consciousness is temporary and the means of attaining it somewhat dangerous. Transcendental meditation is much safer, and its effects are more permanent, leading ultimately to greater frequency and spontaneity of the artistic vision. Instruction in this technique should be made available to the students of the artistic college.

The faculty should also attempt to encourage student interest in several other crucial directions. The artist should understand and be able to use media as an extension of his human capabilities. He must also learn to transcend time and space in his work, if he is to become the prophet of the electronic age. Finally, he must develop his ability to communicate archetypally to those who will come in contact with his creation.

The artistic college would not only result in the maximum development and creative expansion of the artist, but it would also provide an alternative for those students who have become disillusioned with traditional education. The main advantage of the artistic education is that there is no prescribed course of study; rather the student is encouraged to broaden his own sphere of interest while receiving professional advice and guidance. He is also placed in a situation where the "bull session," which is externalized in traditional colleges, becomes the focal point of the learning experience, providing maximum exchange and development of ideas and an increased degree of social awareness.

While it is the artistic education that is proposed here, primarily as an alternative to traditional education, present-day colleges and universities would benefit tremendously from change in the directions outlined above. These institutions are still steeped in the archaic traditions of job orientation, nonparticipatory methods of instruction, and American nationalism. Only artistically educated people will remain master of the computer, and only with artistically educated people can the dream of world peace and racial harmony become a reality. Otherwise, if education continues on its present course, humanity will literally be swallowed by its own technology.

THE ALUMNI FUND

Why?

Every year WPI, along with most colleges and universities, conducts an annual alumni fund campaign. It is a program designed to raise funds for current operation of the college from its former students. At WPI this program has been an annual tradition since 1924 except for the three years of the Centennial Fund Campaign. Last year, WPI's program realized \$148,403 from 2,917 alumni directly and through corporate matching. This year, 1970-71, goals of \$300,000 and 50% participation (4,650 alumni contributors) have been set.

Why So Much?

WPI is not much different from most privately endowed and operated colleges in the country. We have failed to balance our budget six out of the last seven years, and in 1969-70 we had a deficit of \$400,000. An optimist might look at that loss (income 4.2% below expenses) and say it's not bad when compared with deficits at a large number of other schools where income was generally 10% below expenses. But the cold, hard facts are that any loss means a depletion of the school's reserve funds to pay expenses. It is clear that this practice can't go on forever.

The budget for 1970-71 at WPI will be balanced if we can raise \$550,000 for current operations. Of this total, \$300,000 has been set as the goal of the annual alumni fund, with the remainder to be contributed by foundations and corporations. This is a very large amount. But if WPI is to maintain the quality of its education, to continue those programs that have distinguished the school for so long, then we will need that much. Economic inflation enters into the picture as a significant factor. But there is also a kind of technological inflation: WPI educates men and women to be able to work in and deal with the increasingly technological world of today. But one of the ramifications of increasing technology is that we must keep striving forward, breaking new ground. To stand still is to be left behind, and the quality that has always been associated with WPI and never more than now, with the advent of the WPI PLAN - must inevitably suffer unless we keep pace with the expanding world. These two forms of inflation are conspiring to force up the expenses of the college. And this is why we are asking so much from our alumni.

Added Benefits

Many alumni frequently underestimate the real meaning and value of their gifts. Many corporations match a gift from an alumnus to his college, usually on a dollar-for-dollar basis with some upper and lower limits attached. Thus the alumnus' contribution actually doubles in value.

A potentially greater source of revenue for the college comes indirectly. While the actual dollar contributions from alumni are vitally important, the percentage of participation by alumni is equally important. This is true because many foundations look at the performance in alumni giving as a good indicator of the strength and vitality of the institution. They use this as one of their criteria in selecting recipients of grants. The figure most frequently cited as "acceptable and commendable" is 50% participation. For WPI this means gifts from 4,650 alumni are needed. For alumni who feel they can't afford a "large" gift, therefore, the contribution of something is still most valuable in generating additional support.

Can We Do It?

I have referred to levels of support and participation far above our recent efforts, and I am firmly convinced that these high levels are attainable. My optimism is based on two facts. First, about 75% of the alumni who have been personally approached have indicated their intention to contribute, although only a disappointingly small percentage of these people have actually made a gift or pledge. Second is an evaluation of alumni giving from 1967 to 1969 at several colleges and universities about our size and located in the Northeast. (Outstanding programs such as Yale's and Dartmouth's have been excluded to give an accurate summary.) Summarized below, there are some very surprising facts relating our annual giving record to twelve other similar programs.

		Represe	ntative	Alumni	Giving		
Amherst	<i>F/Y</i> 67–68 68–69	No. Alumni 11,584 11,746	Alumni Number 6,350 6,148		\$/Alumni Fund \$ 483,360 563,488	\$/Alumnus 41.73 47.97	Average Gift
Bowdoin	67–68 68–69	9,203 9,354	4,558 4,551	49.5 48.7	430,262 506,342	46.86 54.13	
Colgate	67–68 68–69	13,031 13,548	6,752 6,579	51.8 48.6	548,810 532,738	42.12 39.64	
Hamilton	67–68 68–69	6,479 6,943	3,200 3,643	49.2 52.5	179,936 188,432	27.77 27.14	
Haverford Holy Cross	67–68 68–69 67–68	4,295 4,217 15,317	2,158 2,018 3,721	50.2 47.9 24.3	187,514 177,182 439,940	43.66 42.01 28.72	
Williams	68–69 67–68 68–69	15,627 11,150 11,342	4,066 6,301 6,307	26.0 56.5 55.6	579,071 517,218 522,152	37.06 46.39 46.04	
Cooper Union	67–68 68–69	8,820 9,000	3,292 3,121	37.3 34.7	205,518 196,162	23.30 20.79	
Lehigh MIT RPI	67–68 68–69 67–68 68–69 67–68	22,451 22,948 54,758 54,852 23,962	7,452 7,851 18,771 19,829 8,128	33.2 34.2 34.3 36.2 33.9	583,038 767,247 2,842,046 2,644,460 560,171	25.97 33.43 51.90 48.21 23.38	
Stevens	68–69 67–68 68–69	24,753 6,600 6,650	7,307 2,874 2,682	29.5 43.6 40.3	692,434 137,473 135,550	27.97 20.83 20.38	
Total Liberal Arts Colleges		143,834	66,352	46.1	\$ 5,856,445	\$40.72	\$ 88.30
Total Engineering Colleges		234,794	81,307	34.6	8,764,099	37.33	108.00
Total Liberal Arts & Engineering		270 620	147.650	39.0	14,620,544	38.08	99.00
Colleges	67.60	378,628	147,659	39.0	112,452	12.89	33.00
WPI	67–68 68–69	8,724 8,994	2,714 2,928	31.1	112,452	13.79	يده من مناس ال
Total WPI		17,413	5,642	32.4	232,275	13.34	41.20

Figures taken from American Alumni Council— Council for Financial Aid to Education

September 3, 1970

Why Give?

Let's take a quick look at why you should contribute to the Annual Alumni Fund. Obviously there's the financial need factor which has already been covered quite thoroughly. It certainly isn't good business to operate at a deficit every year and eventually a tuition ceiling will probably be reached. Tuition will be \$2525 in September, 1971 and yet this figure, which has risen so rapidly in recent years, still only covers about 60% of the cost of educating a student. But beyond the pure financial need factor, I think every alumnus can answer three simple questions which will determine if he should give.

First, what did the college do for you? Every alumnus of WPI received a sound education in the fields of science and engineering plus a social education of living, working, and playing. Your education from WPI, which you received in the relatively short period of about four years, probably more than anything else formed the foundation which has brought you to where you are today.

Second, what is the college doing for you? It is continually broadening and strengthening its reputation. As this happens, your college degree becomes more meaningful. The WPI PLAN is a great innovation which has generated unusual interest and support in the college. Even MIT has asked for copies of the PLAN so they may study it! It has placed WPI in a leadership role in the field of science and engineering education. The Clean Air Car Race last summer brought us much favorable publicity. This continued updating and improving of our total program will educate the best possible engineers and scientists. In brief, then, WPI is moving ahead rapidly in many areas of concern; as

this happens and the recognition of and interest in WPI increases, so does the value of your WPI education.

And finally, what will WPI do for you? This is the hardest question to answer because the future is so unpredictable. But, in generalities, we will continue to move ahead as a leader in science and engineering education. We will provide many more opportunities for alumni to become involved in WPI through project and Intersession activities. We are just starting an organized alumni placement program, as outlined elsewhere in this issue. We will make every effort to economize, introduce efficiencies, and be more effective. And in summary, we will continue to strive to be number one in the field of science and engineering education.

The Alumni Fund Campaign This Year

To raise the money we need this year, the alumnifund is being conducted on a chapter-by-chapter schedule, with personal solicitation by alumnibeing the method of contact. To date, about 75% of the alumni personally contacted have indicated that they intend to give; unfortunately, only a disappointingly small proportion of these people have actually made a gift or pledge, as indicated in the chart of chapter giving to date.

So the job between now and June 30 is very clear-cut; it simply involves getting our large number of concerned and interested alumni to make a definite commitment for a gift or pledge by sending a pledge card to the alumni office. This follow-up is being pursued by a combination of mail and phone contacts. If the program is to be successful—that is, if the alumni do their fair share by contributing \$300,000—the chapter must meet the individual goals shown in the chart

- Stephen J. Hebert, '61

District Summary						M	larch 5, 1971
Chapter Berkshire Boston Central New York Chicago Cincinatti	Rank 3 6 5 17 28	 ⋠ in Chapter 64 907 109 122 52 		% Giving 25 15 16 5	Goals \$ 2,000 26,000 3,500 3,500 1,600	Total Gifts \$ 470.00 6,411.00 920.00 2,890.00 10.00	Average Gift \$ 29.38 46.46 54.12 481.67 10.00
Cleveland Connecticut Valley Detroit Eastern Connecticut Hartford	11 1 17 29 23	105 345 92 120 634	9 110 5 1 23	9 32 5 1 4	3,000 11,500 2,500 2,900 20,000	645.00 9,733.00 503.00 50.00 1,370.80	71.67 88.48 100.60 50.00 59.57
Hudson-Mohawk Los Angeles New Haven New York North Shore	4 17 15 23 11	143 273 350 538 322	30 15 20 22 30	21 5 6 4 9	4,500 7,500 12,000 17,500 9,000	2,476.00 665.00 630.00 5,413.00 1,907.00	82.53 44.33 31.50 246.05 63.57
Northern California Northern New Jersey Pacific Northwest Philadelphia Pittsburgh	17 17 26 15 7	174 468 36 274 99	9 24 1 17 14	5 5 3 6 14	4,500 15,000 800 11,500 5,000	1,375.00 4,565.00 100.00 875.00 1,700.00	152.78 190.21 100.00 51.47 121.43
Rhode Island Rochester-Genesee Southeastern St. Louis Washington	2 9 17 10 23	307 110 130 21 396	92 14 7 2 16	30 13 5 10 4	7,500 3,400 3,100 12,000	3,064.00 618.00 410.00 353.00 8,563.00	33.30 44.14 58.57 176.50 535.19
Western New York Wilmington Worcester Out of District Others & Honorary	11 26 7 11	89 124 1437 1527 979	8 4 197 141 6	9 3 14 9	2,400 5,800 45,000 49,000 8,000	260.00 247.00 14,455.00 16,721.00 425.00	32.50 61.75 73.38 118.59
Totals Matching Gifts GRAND TOTAL		10,347	995 88	10	\$300,000	\$87,824.00 6,170.00 \$93,994.00	\$ 88.27

In addition to the above amount, we have received \$68,443.31 in bequests.

ENGINEERING-

Careers in Trouble?

a new alumni placement counseling service

by Olle H. Halttunen, '45 Vice-President for University Relations

Today's headlines talk about inflation, recession, and rising unemployment among engineers. Should we recommend engineering as a profession to our children or to the children of our friends? If we ourselves are faced with the need to find new employment, how do we go about it? It is to these two questions that this article addresses itself.

Is engineering a good profession for the future? First, let us recognize that the headlines dealing with joblessness among engineers usually refer to unemployment resulting from military and space program cutbacks. The major pockets of engineering unemployment are in Boston (Route 128), Los Angeles (the aerospace industry), Florida (the space program) and Seattle (Air Force cutbacks and the SST slow-down). Because of the number of engineers employed in military and space programs, this is a major problem. But will it continue into the foreseeable future? Not likely. Unless the SALT talks produce meaningful disarmament (a doubtful hope), the many programs necessary to national military preparedness will have to be reaccelerated. Certainly the solution of our environmental problems will command an increasing amount of our national resources - and these problems have a large technological content. Moreover, our expanding technology and increasingly complex society will demand more people with strong educational backgrounds in science and engineering. No, our present problems are bound to be transitory - people with scientific training will be increasingly in demand as we move into the future.

So the future looks bright, but yet an individual is faced with unemployment. What should he do? At WPI we are taking steps to help our alumni answer this very troubling personal question. We offer two different approaches.

The first revolves around the WPI Placement Office and its director, William F. Trask. Many of you obtained your first jobs through this office when you graduated from WPI. This office now maintains contacts with about 500 industrial personnel directors around the country, about 300 of whom have recruited on the WPI campus at one time or another. While this year only about 200 companies have been actively recruiting on campus, we believe this number will increase again as the economy improves.

The WPI Placement Office also maintains contact with GRAD (Graduate Resume Accumulation and Distribution) which is operated by the College Placement Council, Inc. Through this system, an individual can place a resume in the hands of hundreds of companies at no cost to the individual himself. The individual, if he so desires, may exclude his present employer from this distribution.

Both Bill Trask's contacts and the GRAD program are especially suited for graduating seniors and recent graduates (within five years). These systems have been of assistance to graduates who have been out for five to ten years, but the available opportunities tend to diminish as the number of years since graduation.

The second approach addresses itself to the alumnus who has been out of school for ten years or more, or who perhaps has advanced professionally to a level where his job search requires a more sophisticated approach. I hasten to add that this type of job search requires an active role on the part of the job-seeker and that WPI's role must necessarily be one of acting as advisor. But, for many people, that role of the active job-seeker is a strange one, and even the writing of a resume becomes a frightening task. And so we stand ready to offer guidance and support

for your efforts.

As a first consideration, you should be aware of how positions are filled. The following table of recruiting methods is given in Auren Uris' book *The Executive Job Market* (New York: McGraw-Hill, 1965).

promotion from within	63%
executive employment agency	41%
personal referral by an outside source	47%
position available advertising by the company	35%
executive search firm	34%

The total exceeds 100% because many firms use more than one method.

How then should you proceed in this most important sales task of your life? We suggest four steps:

- 1. Write a resume
- 2. Describe the kinds of positions or businesses which fit your talents.
- 3. Decide what geographical limitations you wish to observe.
- 4. Plan a program for contacting prospective employers.

To assist you in performing these tasks, we offer a package of valuable guides. For example, the offering will

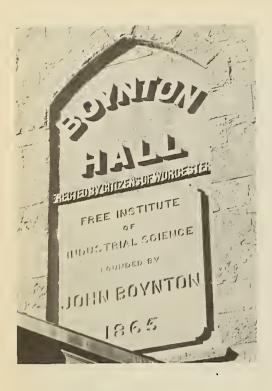
include some helpful hints on how to write a resume, how to get them reproduced attractively and inexpensively, and even contain a sample of a well-done resume. The offering will include names of the executive recruiters to whom you might send your resume. (There are from 1000 to 1500 such recruiters active in the United States at this time, but it is an ever-changing list.) In addition, we will describe how to use Standard and Poor's Register and other sources of information relative to potential employers to contact. There is no charge for the service.

The next step is up to you. If you are in the market for a job, drop us a note outlining your objectives and including your resume. If you have geographical limitations, please state them. We will then send you the information described above and place your resume in a confidential file. We also hope that those of you who are seeking employees will keep us posted of job opportunities you may have so that we can refer alumni to you when there is an obvious match of need and talent.

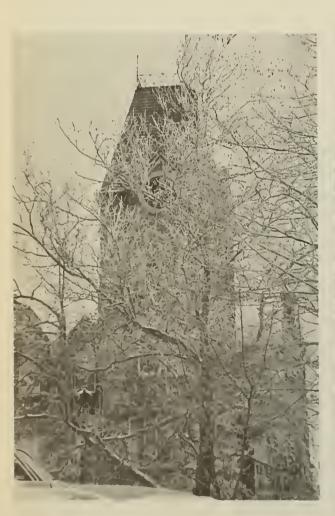
May all alumni be blessed with work which is rewarding and challenging and filled with opportunities for advancement. If this is not the case, and you want our help, write to the Alumni Placement Counseling Service, WPI.



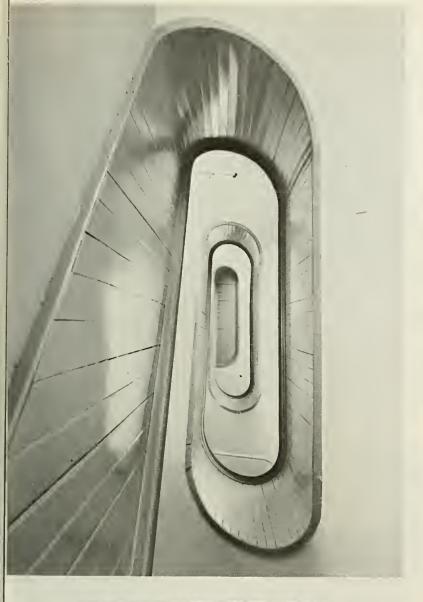
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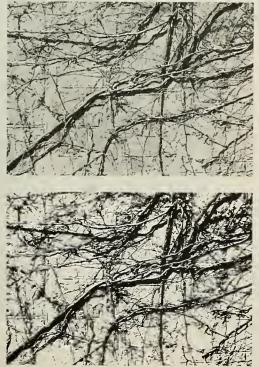
A PHOTOGRAPHIC ESSAY BY RUSSELL KAY





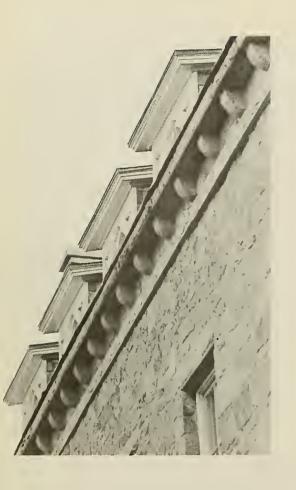








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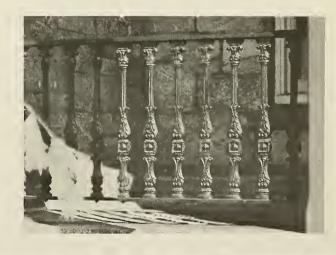














WHERE WE STAND Higher Education Today

WPI has a number of problems, financial and otherwise. Most people connected with the college are aware of these, and we try to keep our alumni and parents well-informed on our condition. But before anything further is said about our problems, it seems high time to put them in perspective. For WPI is fortunate compared to many schools. The overall situation of higher education in this country has never been more troubled.

To a very considerable degree, the colleges and universities in our country reflect the divisions and problems of the larger society. This is often painful and unpleasant, but in many ways it is a very useful, even proper, role. Consider, for example, the other institutions of society. Are there any that do not share this type of turmoil? The family, the church, public schools, the courts, and the political machinery all are feeling the tremendous pressures of change. All are struggling to adapt to needs and problems that no society in history has faced.

But the "public's" response to the problems of higher education, in contrast to the reaction to the similar problems of other social institutions, is most alarming. More often than not the response has been simple withdrawal if not downright repudiation. For example, Alumni contributions to most colleges are down. And even where the dollar amount has not decreased, very often the number of alumni who contribute to their alma mater has decreased. This is an unhealthy situation. WPI is much better off than most. This year's Alumni Fund shows significant gains over last year.

The waves of disruption and protest that have been evident on the nation's eampuses for the last several years, together with the violent actions of some radicals, have alienated many people.

The "public," by means of the state and federal legislatures, has quite clearly registered its displeasure with and disapproval of institutions of higher education. By restricting government support — to both public and private schools — these legislatures are using their budget alloca-

tions and spending programs to "punish" colleges and universities for their sins.

Complicating the problem is the so-called generation gap, the differences in life-styles of today's students and their parents. This has raised a screen between young and old and made communication terribly difficult. But it is nonetheless true, though many would rather not hear it, that the current generation of young people will, before many more years, run this nation. The young people are here, and they cannot be traded in for a quieter, more polite, more docile group. And there's another side to this problem. For, as was recently stated in a public-service ad in Time, the situation is the direct result of the older generation. "And you're still working on it. Because you've brought up your children to believe in human rights and peace and justice as no generation has before. But you forgot to tell them that while you believed in all these things, you weren't in all that much of a hurry to make them come true.

"These kids aren't waiting. They have the kind of active concern for our country most of us didn't have until we were working, married and voting. In awareness, education, conomic advantages, mobility and social experience, no generation has ever been so close to its elders. And that's where the problem is. Today's kids in their teens and twentics are political and social adults. There isn't a generation gap. There's a generation overlap."

Our faith in our students here is evident in the WPI PLAN, which will give each student a greater say in what his education is and what it will mean to him. Experience has shown that most students are far more responsible — and sensible — than many of their off-campus elders give them credit for being. A person develops responsibility only by exercising it. We recognize this fact, and the WPI PLAN will work toward that end. And it is most gratifying that our alumni and all the corporations and foundations that support us have rallied behind the WPI PLAN.

THE MONEY

But the problems of the nation's colleges and universities are far deeper than a momentary lapse of public confidence. For even with the full confidence of the American people, most of the institutions of higher education in the country would be having financial difficulties. Without the public's confidence, it is becoming increasingly apparent that large numbers of those institutions simply cannot survive.

- FACT: Tufts University has eliminated its school of theology.
- FACT: Saint Louis University has closed its school of dentistry and is phasing out its school of engineering.
- FACT: Case Western Reserve University has terminated its graduate physical therapy program.
- FACT: Reed College is cutting the size of its student body and raising its student-faculty ratio.
- FACT: 43 of the nation's 107 medical schools are in such severe financial troubles that they are receiving "disaster grants" from the federal government.
- FACT: More than 20 institutions of higher education closed their doors last year.
- FACT: About one-fourth of all private liberal arts colleges in the nation are now drawing on their endowments in one way or another simply to meet current expenses.

The financial situation of colleges and universities was dark in 1968; in 1971 it is either critical or impossible. WPI has operated at a loss for the past four years. This year we are spending some \$500,000 more than we are taking in.

Even the rich institutions are in trouble. Harvard, Yale, MIT, all are having to dip into their endowment funds. What happens when the pot runs dry? Yale president Kingman Brewster foresees that, if the present drying-up of money continues for another year, Yale "would either have to abandon the quality of what we are doing, or abandon great discernible areas of activity, or abandon the effort to be accessible on the merits of talent, not of wealth, or of race, or of inheritance." As of this academic year, Yale announced a freeze on hiring until further notice — no new positions, and no replacements for vacancies. Yale's problem is far from unique. Paul Simon, lieutenant-governor of

Illinois, has predicted that unless state governments provide financial assistance, some one-third of the nation's private colleges may go out of existence by the end of the decade. Clark Kerr, chairman of the Carnegie Commission on Higher Education, recently announced the commission's finding that two-thirds of all U.S. colleges and universities were in financial difficulty or headed toward it full-tilt. The Reverend Theodore M. Hesburgh, president of Notre Dame, says: "Never before has the university taken on more tasks, and been asked to undertake many more, while the sources of support, both public and private, both moral and financial, seem to be drying up."

The federal government has drastically cut back its support of higher education, whether for research, construction, or student financial aid. This has been sharply felt at WPI this year. While financial support from corporations, foundations, and alumni is significantly higher than last year, the difference in the amount of government funds has wiped out that gain.

TECHNOLOGY IN THE U.S.

It is true that a considerable part of the nation's technological progress has been solidly based on the scientific work, the scientific education, of schools such as WPI. To the degree that we — and other universities — are weakened, that much will the country's scientific advancement be slowed. Because of cutbacks now being made in scientific research, the United States may lose its scientific and technological leadership — and perhaps its economic wellbeing — in the years and decades to come. Teams of scientists and technicians, painstakingly organized over the years, are now being split up and scattered. The educational and training programs that have always provided the nation with its scientific manpower are stumbling, and some are being forced to shut down.

But there is hope for the future. There seems to be a clearly discernible turn in national policy and national goals, away from military and defense-oriented research, away from the relatively speculative and more remote areas such as the space program, to the more direct and pressing concerns of cleaning up the environment and making the cities of the country safe, healthy, and sane places to live in. With this change in mind, the National Science Foundation has shifted the emphasis in some of its major

programs toward the environmental and social sciences. It should be realized, however, that institutions which are forced into major retrenchment to offset growing deficits will be seriously hampered in their efforts to help solve these urgent social problems.

The shift toward environmental sciences is clearly evident here at WPI. The newly formed Environmental Systems Study Program began operation in February with 23 students working off-campus on real problems concerning air pollution and water pollution. This is a prototype of the project side of the WPI PLAN. Some 25 students have been working, on their own, with the Worcester Health Department all year to help stop and correct the pollution of Salisbury Pond. The Clean Air Car Race was yet another example that there is a considerable degree of student and institutional concern for the environment here at WPI. Toward this end, a faculty committee headed up by Prof. Theodore Crusberg is studying WPI's long-range objectives and needs in the biological sciences a necessary part of any environmental program. In the meantime, exploratory courses in biology have been offered, and students can cross-register for biology courses at Clark and Holy Cross.

WHAT CAN YOU DO?

It has become far too clear in the last couple of years that too few Americans, both on and off campus, understand the real nature of colleges and universities, how they function, the way in which they are governed, why they are and must be centers for exploration, criticism, and controversy — and why they must always be free. If a major disaster for higher education and for society is to be averted, then moderate Americans in every walk of life must make their voices heard and their influence felt.

Alumni, because of their own educational experience and their special relationship to colleges, have a very important role to play in helping to restore public confidence in higher education. They can make a special effort to inform themselves and to understand, and they can share that knowledge and understanding with their fellow citizens. The mass-media image of higher education is all that many people ever get, and in their lack of knowledge people are too ready to believe the worst. The tremendous positive contributions that colleges have made in the past are forgotten. Here is where alumni — ours and everyone's — can make an important contribution. They can seek to cool tempers and to restore perspective. They can challenge and correct misinformation and misconceptions. They can do much to restore the public confidence.

For alumni do understand, by and large, and they do support their schools. One very surprising thing, to many, is not that some alumni are withdrawing their support of their alma maters, but that so many are continuing to support their schools right through the crises and the turmoil.

Yes, we consider that WPI is among the more fortunate of American colleges. We enjoy the support, both moral and financial, of our alumni. The campus has been peaceful. WPI students are genuinely interested in getting an education and in using it to help themselves and their world. Life isn't easy for any of us these days — you or WPI — but having your backing does make the burden lighter. Thanks.

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ALUMNI COUNCIL PICKS TRUSTEES

The WPI Alumni Council at their winter meeting on February 16, nominated Howard C. Warren, '42, to the WPI Board of Trustees. The Council renominated James J. Clerkin, Jr., '45, and Francis S. Harvey, '37, who have both served on the board since 1966.

Warren is president of Scam Corporation, which in 1969 acquired control of Riley Stoker Corporation in Worcester. Clerkin is executive vice president for telephone operations of General Telephone and Electronics in New York. Harvey is president of Harvey and Tracy, Inc., consulting engineers in Worcester.

71 - 72 BUDGET APPROVED

The WPI trustees have approved an \$11 million budget for next year at their winter meeting. According to president George W. Hazzard, the budget will be balanced if the college can meet its fund-raising objective of \$570,000.

"The budget for the 1971-72 college year will be very tight, but it represents the minimum realistic expenditure necessary to provide the high quality scientific and engineering education that our students deserve and expect," said Dr. Hazzard.

CLEAN AIR CARS ON TOUR

The WPI hybrid-electric Gremlin which shared first place in its division of the Clean Air Car Race last summer (see the Fall 1970 Journal) spent nine days on display at the Chicago Auto Show, one of the largest in the country. Some one million people attended. Its appearance was sponsored by the American Oil Company, whose lead-free gas the car burns.

With the car were WPI students and Clean Air Car team members Steven Clarke, David Nowak, William Medeiros, and Allen Downs. Not to mention Sandy Wolsfeld — Miss World, USA.

* * *

In January, the WPI "Propane Gasser," the cleanest car in the 1970 Clean Air Car Race, was displayed at the Society of Automotive Engineers Engineering Congress and Exposition at Detroit. Sponsored by the National Liquified Gas Association, the car was seen by almost 50,000 people.



President Hazzard noted that the fund-raising objective is about equal to the amount of yearly operating funds used for scholarship aid. This is in addition to endowed scholarship support. Total scholarship aid to WPI students exceeds \$1 million per year. Discussing this year's fundraising program, the president reported that gifts from corporations and foundations were up significantly this year over last. This is offset, however, by cuts in federal government support, particularly in programs of financial assistance to students.

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WEISS GETS GRANT

Alvin Weiss, Professor of Chemical Engineering, has just been awarded a two-vear, \$129,000 grant from the Environmental Protection Agency of the U.S. government to study methods of producing crude oil from solid waste materials trash and garbage. Working primarily with cellulose wastes, which comprise about 46 percent of garbage, Prof. Weiss will investigate methods of conversion starting with very small, laboratory quantities, and working up to larger operations that can process 100 to 200 pounds of waste a day.

Weiss sees this study as becoming increasingly important in the years to come. Although such a process may not be economically feasible now, the world's supply of crude oil is dwindling at a rate that will make it both viable and necessary in the future. The object of Weiss's study is not to produce barrels of oil but to produce information.

This project is an outgrowth of two previous interests of Weiss: petroleum technology and food synthesis. Weiss has been studying the latter for several years under grants from NASA. The project combines aspects of both of these previous technologies and is a good example of a beneficial nonmilitary spinoff from the space program.

WINTER WEEKEND HAS SPRING WEATHER

February 19-21 was Winter Weekend at WPI. Several days of 40° weather, however, made it seem more like spring. Alpha Epsilon Pi sponsored a snow sculpture contest, which was nearly melted out by the unseasonable temperatures and washed out by rain. First prize went to Alpha Tau Omega's rendition of the hookah-smoking caterpillar from Alice in Wonderland.

Among the events helped by the weather was a Friday night concert by Janet Johnson, folk singer and autoharpist, and Quarry, a country-folk-rock group. Saturday afternoon featured varsity wrestling against Holy Cross and fencing against RPI, while basketball against Suffolk rounded out the day.

Sunday afternoon the Pacific Repertory Company presented two plays by Eugene Ionesco, The Chairs and The Lesson. On Sunday evening there was a concert in Harrington auditorium with Jo Mama and Carole King, featuring James Taylor. This was the first major concert on campus since the appearance of The Band November 7, which was disrupted by "townies" who wanted to get in without paying. All major concerts scheduled between then and now had been canceled. Sunday's concert was without incident.



PEOPLE

Kenneth A. Nourse has been appointed Dean of Admissions. Dean Nourse was formerly Director of Admissions and Associate Dean of Student Affairs. He has been at WPI since 1965.

A graduate of Middlebury College, Dean Nourse is a past president of the New England Association of College Admissions Counselors.

* * *

Professor John P. van Alstyne has been named Dean of Aca-

demic Advising in the office of student affairs. In this position, Dean van Alstyne will be the "executive officer" for the WPI PLAN, and will oversee the faculty advisory system and the smooth transfer of students to the WPI PLAN.

Dean van Alstyne has been acting head of the Mathematics Department and a member of the committee that formulated the WPI PLAN. He is a graduate of Hamilton College and Columbia University.



PUBLICATIONS DIRECTOR NAMED

H. Russell Kay, 28, has joined the WPI staff as Director of Publications.

In the newly created position, he will supervise the design and production of catalogs, educational program announcements, and other printed material, as well as edit the WPI Journal.

He was formerly an assistant editor at Northwestern University Press, Evanston, Illinois. Before that he was a photographer with World Book Encyclopedia and a photojournalist with Day Publications.

Mr. Kay earned an AB in English from the University of Chicago in 1965. He and his wife Harriet served as Peace Corps volunteers in a public-health project in Mato Grosso, Brazil, during 1964-65.

Mrs. Kay has also joined the WPI staff, as secretary to Dean of Undergraduate Programs William R. Grogan.



WPI GETS "CIVILISED"

Civilisation, the award-winning BBC film series conceived and narrated by Sir Kenneth Clark, played last month in the Seminar Room at Gordon Library. The 13 segments trace the rise of Western civilization from Greco-Roman times to the present through the medium of art. More than just art history, the series

BEALL NAMED TO NEW KINNICUTT CHAIR

Herbert Beall, assistant professor of chemistry, has been named the first recipient of the Leonard P. Kinnicutt Chair. Dr. Beall is a graduate of the University of Wisconsin, and he received his doctorate at Harvard.

The Kinnicutt Chair is designed to encourage younger faculty members in their professional development at WPI. It is a three-year revolving appointment, with selection by the President on recommendation of the Dean of Faculty, with nominations by department heads.

A special fund of up to \$1,000 a year will be provided to each recipient for materials and equipment, publication, professional travel, student support, or any professional need other than personal salary.

Leonard P. Kinnicutt was a

WPI professor of chemistry from 1882 to 1911. In commenting on the Kinnicutt Chair, President Hazzard said that while Professor Kinnicutt was a chemist, his concern with the applications of chemistry were broad enough to warrant the recognition of nonchemist faculty members through his name, "I hope major attention can be paid to a person's potential teaching, research, for societal concern — like Professor Kinnicutt's — than to a narrower view."

President Hazzard continued, "the Leonard P. Kinnicutt Chair is intended to provide unusually talented and motivated younger faculty members with recognition, some financial resources for professional development, and a challenge to enter upon exemplary professional careers."

shows the interrelations between art and life-styles as they have existed in every period. The series was shown on NET last fall.

* * *

War and Peace — the 6¼ hour short version of the Russian film — inaugurated a series of films

dealing with the subject that will continue throughout the semester. It was shown in two parts on successive evenings.

The series featured films ranging from Eisenstein's classic Alexander Nevsky to Stanley Kubrick's Dr. Strangelove, or How I Learned to Stop Worrying and Love the Bomb.



WRESTLING TEAM TIES CAMPUS RECORDS

With a record of 7 and 4, the wrestling team tied the all-time record for victories set in 1968-69. With 287 team points, there was a tie for the record number of points scored in a season. The 48 to 0 win over Brandeis set a new record as the first shutout and best win. The 33 team pins set a new all-time record for a WPI Wrestling season.

It was no surprise when Coach Lenny Polizzotto was named the Rookie Coach of the Year by the New England Intercollegiate Wrestling Association. Lenny graduated from WPI last June and accepted the coaching assignment when John Vino left last summer. Aside from coaching, Lenny is a full-time graduate student in electrical engineering. This winter, he became a published author. Cimino Publications Inc. have brought out Off Beat Drumming, in two volumes, which Lenny prepared from notes he used in teaching drumming to students while he was still in high school.

Wrestling record:

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WPI	Opp	ponent			
48	Brandeis	0			
10	Coast Guard Acad.	28			
35	Tufts	11			
16	Boston University	20			
33	Williams	11			
18	M.I.T.	24			
35	U. Hartford	9			
23	Lowell Tech	21			
40	Holy Cross	7			
6	U. Massachusetts	30			
2 3	Dartmouth	21			

BASKETBALL TEAM ENDS SECOND WINNING SEASON

Basketball Coach Jim Herrion had reason for his big smile when WPI beat Brandeis 91 to 90 in double overtime to clinch a winning season on March 2 even though they dropped the final game of the season two nights later to Amherst 86 to 74. It was his second winning season in the two years he's been coach.

Senior Tim Rooney from Ludlow, Mass., was voted WPI's most valuable player by the Worcester sports writers. He played in every game and had an average of 16.5 points per game. John O'Brien, a junior from Charlestown, Mass., was close behind with 16.4 points per game. Senior Ed Cunningham from Waterbury, Conn., who was cocaptain with Rooney, scored an average of 13.9 points. Steve Watson, a junior from Syosset, N.Y., was the fourth WPI player to average more than 10 points per game with 11.9.

Play throughout the winter was marked by teamwork rather than by individual stars. However, this year's graduation will require a complete rebuilding for 1971-72 since this was the last season for Rooney, Cunningham, Watson, Don Backlund, and John Anderson.

The record for the season was:

was.			
WPI	Op_I	ponent	
87	Wesleyan	78	
90	Tufts	82	
68	Assumption	94	
53	Springfield	71	
58	U. New Hampshire	72	

74	Bowdoin	72
68	Clark	73
71	Bowdoin	63
72	Williams	71
84	Bates	8 2
80	Colby	70
63	AIC	65
94	Lowell Tech	96
51	M.I.T.	66
78	Trinity	73
88	Suffolk	67
66	Boston Univ.	90
68	Coast Guard	58
71	Clark	77
91	Brandeis	90
74	Amherst	86

CLUB SPORTS

The Fencing Club enjoyed a 4 and 3 season and placed sixth in the New England Tournament at the end of the season. Only one team member will graduate this year and three freshmen with previous experience have joined the team. This is the second winning season in a row for the relatively new Fencing Club.

The Hockey Club won 6 while losing 7 during the season, but within the Worcester County Hockey League they won 5 and lost 3. The club is hampered by limited and expensive ice time on the local area for practice, but in this respect they have a common problem with the other teams in the local league.

In skiing, Bryan "Bucky" Kashiwa, a freshman from Old Forge, N.Y., was the outstanding member of the WPI team. Bucky, an A racer, won events in three of the five meets entered and took second in the other two. In the March 14 N.E. Intercollegiate Ski meet at Wilderness, N.H., the team placed six seconds behind Princeton in the Slalom as Kashiwa won the event. Capt. Don Tanana is the only member who will graduate this year. The team finished the season with no injuries under the coaching of Alan King, who shifts to skis when the soccer season ends.

SWIMMERS SET NINE RECORDS

Coach Carl Peterson's mermen won 6 meets and lost 2 for one of WPI's best swimming seasons. Nine WPI varsity records fell during the season. In the 71-42 win over Brandeis, Bruce Eteson, '72, broke his own record in the 200 vard breaststroke with a time of 2:28.3. In the same meet, a new school and pool record of 3:28.2 was set for the 400 yard freestyle relay by Steve Johnson, Tom Weil, Al Nafis, Dick Ellis. Divers Bill Gemmer and Randy Partridge have been in contention for top place in diving competition all year, with the rivalry being frequently between themselves.

Swimming record for the year:

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WPI	Opp	onent
78	Holy Cross	35
61	Babson	51
52	Coast Guard Acad.	61
62	Northeastern	51
73	U. Massachusetts	37
62	Trinity	51
71	Brandeis	42
39	Tufts	73

Our Goal for the Annual Fund is \$300,000 Have You Helped With Your Share?

On campus we are doing our share, with no salary increases for our faculty and staff next year, no new positions, careful pruning of expenses, and intensive solicitation of corporations and foundations.

Yet we must maintain our high academic quality. More income is required, along with prudent management. Your support is essential to establish a balanced budget. We need your support now to show everyone that our alumni believe in their school.

Please make contributions payable to WPI and send them to the Alumni Office, Worcester Polytechnic Institute, Worcester, Massachusetts 01609. Thank you!





Do You Live in Massachusetts?

All the presidents of private colleges in Massachusetts are trying, through AICUM (Association of Independent Colleges and Universities in Massachusetts) to get the state to increase the amount of money for student scholarships for September 1971 from \$3.5 million to \$8 million.

The commonwealth now gives the \$3.5 million for all the students in the state. By comparison, Boston University alone gives \$4 million to its students. WPI gives over \$1 million a year in student aid, including some \$650,000 in scholarships, of which over \$300,000 has to be taken from operating expenses. This is a staggering amount. If you are in a position to make your voice heard in the Massachusetts legislature, we urge you to support the request for supplementary allocation of funds to student scholarships. Private education is a way of life in Massachusetts and in the nation. We all need to preserve it and support it.

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IN MEMORY

ROY W. MOORE, '01

Roy W. Moore, '01 died on April 22, 1970 in Clearwater, Florida at the age of 90.

He was born in Worcester on January 9, 1880 and attended English High School before entering WPI in 1897. He received a BS Degree in 1901 and a Doctor of Science degree in Chemistry, also from WPI, in 1904.

He was an Assistant Instructor in Chemistry at MIT for one year, whereupon he joined the General Electric Company in Schenectady, N.Y. as a research chemist, and was employed by them for 40 years.

Mr. Moore was a member of the American Chemical Society and a past officer of the Hudson-Mohawk Alumni Chapter.

Mr. Moore is survived by his son, Elliott S. Moore of Largo, Florida, two daughters, Mrs. Eleanor Leverett of Winchester, Mass. and Mrs. Margaret Baum of So. Orange, N.J.

FRED E. HOLMES, '02

Fred E. Holmes, '02 passed away on October 16, 1970 in Holden, Mass. at the age of 90.

Born in Worcester in 1879, he attended Worcester's English High School before entering WPI in 1898 where he majored in Mechanical Engineering. Mr. Holmes retired in 1954 as President of the M.D. Holmes & Sons Co. after 50 years with that company.

He was a member of the Masons, First Baptist Church of Worcester and was a former member of the Rotary Club.

He is survived by one son, two grandchildren, a sister and eight great-grandchildren,

EDWARD L. STONE, JR., '03

Edward L. Stone, Jr., '03 died on January 7, 1971 in Montclair, N.J. after a brief illness. He was 90 years old.

Born in Worcester, Mass., November 18, 1880, Mr. Stone attended Worcester English High School and graduated from WPI in 1903 with a BS degree in Electrical Engineering. While at WPI he was a member of Phi Gamma Delta fraternity.

Employed by the New York Telephone Company as a market development engineer from 1903 to 1910, Mr. Stone spent 23 years with the American Telephone and Telegraph Company as a commercial engineer before retiring in 1933.

He was a member of the American Institute of Electrical Engineers, The American Management Association, the American Statistical Society and was also active in many Boy Scout and school activities.

He leaves two grandchildren and two great-grandchildren.

CHESTER B, STARBIRD, '07

Chester B. Starbird, '07, died on December 13, 1970 at the age of 89.

Born on October 7, 1881 in Buffalo, N.Y., he graduated from WPI in 1907 with a BS degree in Electrical Engineering.

A veteran of World War I, Mr. Starbird spent twenty-three years of his career with the Boston Edison Company before retiring December 1, 1946. Following his retirement from Boston Edison, he worked for the Raytheon Company and Jackson & Moreland Engineers. Although ill for about a year before his death, he was still vitally interested in clean-air engines for automobiles.

He was a member of the Society of Mechanical Engineers, and was also a Mason. He is survived by two daughters.

BERNARD R. ANDREWS, '08

Bernard R. Andrews, '08 died on May 28, 1970 in Boston, Mass. He was 83.

Mr. Andrews was born in Plymouth, Mass. on May 30, 1886 and attended Whitman High School before entering WPI in 1904. He graduated in 1908 with a BS degree in Mechanical Engineering and while at WPI he was a member of Alpha Tau Omega fraternity.

He worked as an engineer for 8uffalo Forge Company, American Blower Co., and B. F. Sturtevant Co. before establishing his own firm, the former Andrews and Goodrich Inc., of Dorchester, Mass, in 1920. The firm, now part of Midland-Ross Corp., manufactured heating and venting machinery. He retired 15 years ago.

An active citizen of Braintree, Mass., he served that town in many capacities during his long residence there. He was also a trustee of Thayer Academy for several years, and a past Commodore of the Stone Horse Yacht Club in Harwichport, Mass.

He is survived by his son, Bernard R. Andrews, Jr., two granddaughters, and a great-granddaughter.

HAROLD F. BIDWELL, '08

Harold F. Bidwell, '08 passed away on October 20, 1970 at the age of 85.

Born in Manchester, Conn., Mr. Bidwell attended Worcester Academy before entering WPI in 1904 where he majored in civil engineering. He was a member of Delta Tau fraternity, now Sigma Phi Epsilon.

Mr. Bidwell owned and operated the former Bidwell Ice Cream Soda Shop in Manchester for 20 years prior to his retirement.

He is survived by his widow, Mrs. Lula M. Bidwell, a daughter, two sons, eight grandchildren and two great-grandchildren.

ERNEST C. WILLARD, '08

We have learned of the death of Ernest C. Willard, '08 on November 21, 1969 in Portland, Oregon.

Born December 23, 1887 in Leominster, Mass., he attended Groton High School before entering WPI in 1904. He enjoyed a varied career as a Consulting Engineer in the Field of Public Utilities.

He was a registered Professional Engineer in many states and was active in many civic affairs in Portland, Oregon. He was also Chairman of the Board of Trustees of Multnomah College which recently merged with the University of Portland.

MARTIN H. JACHENS, '11

Word has been received of the death of Martin H. Jachens, '11 on June 21, 1969 after a short illness. Mr. Jachens was 80.

He was born June 14, 1889 at Brooklyn, N.Y. and attended Brooklyn Manual Training High School before entering WPI in 1907. He graduated with a BS degree in Electrical Engineering in 1911 and while at WPI he was a member of Alpha Tau Omega fraternity. From 1911 to 1955 he was employed by the New Jersey Bell Telephone Co.

He was a member of the Masons and was active in many civic organizations in his home town of Leonia, N.J.

His survivors include his widow, Lucy, one daughter and two sons.

HAROLD R. WINTER, '11

Harold R. Winter, '11 passed away on September 19, 1970 in Winthrop, Mass.

Born in Medford, Mass., July 29, 1888, he attended Webster High School before entering WPI in 1907, where he majored in civil engineering and graduated in 1911 with a BS degree. He was a member of Delta Tau fraternity.

During his business career, Mr. Winter was employed for eleven years as Chief Engineer for the A. L. Smith Iron Works of Chelsea, Mass., and also spent twelve years as a Structural Engineer with Waghorne & Brown Co. of Boston, Mass. before his retirement in 1953. He had served over fifteen years as a Park Commissioner for the Town of Winthrop, Mass., and was a member of the Boston Society of Civil Engineers.

EDWARD J. DAHILL, '13

Edward J. Dahill, '13, an engineer who pioneered in developing corrugated paper packaging for fruit and produce, died on January 12, 1971 in New York City. He was 82.

Born in Greenfield, Mass. on January 1, 1888, he attended Fitchburg Mass. High School before entering WPI where he majored in civil engineering.

At the time of his death, Mr. Dahill was Director of Market Research for the Four-drinier Kraftboard Institute, and for thirty years prior to joining that organization, had been chief engineer with the American Association of Railroads where he headed its freight loading and container bureau while new methods of packaging were being tested to qualify for handling in rail transportation.

He was the author of numerous articles and pamphlets and had been a guest lecturer at many colleges and universities throughout North America. He was also a member of ASTM, SPHE and the Transportation Corp. He had also served the New York Chapter of the WPI Alumni Association as both a Vice

President and was President during 1957 and 1958

He is survived by four sons, a sister and twenty-three grandchildren.

SHERMAN A. GEER, '13

Sherman A. Geer, '13 died on January 20, 1970 in DeLand, Florida. Born on August 6, 1890, in Dalton, Mass. he attended Dalton High School before entering WPI in 1908 where he majored in Electrical Engineering.

Mr. Geer was a retired equipment engineer in the Long Lines Section of the American Telephone & Telegraph Co. and had been employed in the New York City office for thirty-six years prior to his retirement in February of 1949.

ALTON H. KINGMAN, '13

We have been advised of the death of Alton H. Kingman, '13 on October 30, 1970

Born on July 7, 1889, in Brockton, Mass., he attended Brockton High School and graduated from WPI in 1913 with a BS degree in Mechanical Engineering. Upon graduation, he accepted a position in Pawtucket, Rhode Island with the American Telephone & Telegraph Co., and later held various supervisory and staff assignments with the Boston, New Haven and New York City offices of that company until his retirement after forty-one years with them.

He was a member of Sigma Alpha Epsilon social fraternity, the Telephone Pioneers of America and was a member of St. George Lodge AF&AM of Brockton, Mass.

Surviving him are his wife, Ethel W. Kingman, a daughter, a son, seven grand-children and one great-grandson.

JAMES R. LEONARD, '13

James R. Leonard, '13 died on November 5, 1970 in Worcester, Mass.

Mr. Leonard was born May 16, 1891 and attended Worcester English High School before entering WPI in 1909. He graduated from New York University School of Accounting and was an accountant all his life, serving as Assistant Supervisor in the Field Service of the Massachusetts Division of Employment Security in the Worcester Office when he retired in 1961.

He was a veteran of the United States Navy, World War I.

He is survived by his widow, Elizabeth H. Leonard, and a sister.

DONALD M. RUSSELL, '13

Donald M. Russell, '13 passed away on October 8, 1970, in Philadelphia. He was

79. Born in Worcester, Mass. on April 15, 1891, he attended South High School in Worcester before entering WPI in 1909. He received his degree in Electrical Engineering and was elected to membership in Tau Beta Pi and Sigma Xi honorary societies. At the time of his death, he was an inactive partner of Lybrand, Ross Bros. & Montgomery, of New York City and had previously been employed by them for forty-eight years prior to his retirement on October 1, 1957.

He was a Past President of the Michigan Association of Public Accountants and Past Vice President of the American Institute of CPA's as well as being a member of the Rotary Club and the Stuart-Cameron-MeLeod Society of New York.

Surviving him are his wife, Lillian R., two sons and a sister.

A. FREDERICK GRIFFIN, '14

A. Frederick Griffin, '14 died on September 29, 1970 at Glen Ellyn, Illinois. He had been in ill health for a number of years.

Born in Rensselaer, N.Y. on December 3, 1892, Mr. Griffin majored in civil engineering at WPI and had been employed by the Army Corps of Engineers for 34 years before his retirement in 1960. He had been the Chief Engineer on the St. Lawrence Seaway Project and in 1945 he received the Exceptional Civilian Service Award for Outstanding Performance. He was a Mason, a member of the American Society of Civil Engineers and a Registered Professional Engineer.

Survivors include a daughter and a sister.

FRANK H. LITTLE, '15

Word has been received of the death of Frank H. Little, '15 on December 6, 1970 in Wareham, Mass. Mr. Little was 77.

Born in Marion, Mass., he was a veteran of World War I and was a former resident of Atlantic City, N.J. where he worked for the Hotel Traymore. He retired three years ago and moved to Wareham, Mass.

While at WPI, he was a member of Theta Chi fraternity.

Survivors include a sister, Mrs. Sybil E. Eldridge of Wareham.

THEODORE E. KLOSS, '16

Theodore E. Kloss, '16 passed away on November 14, 1970 in Waterville, Maine after a brief illness. He was 77.

Born in Millbury, Mass. on November 22, 1892, Mr. Kloss majored in civil engineering while at WPI and received a BS degree from the University of Maine in 1917. While at WPI he was a member of Phi Gamma Delta fraternity.

Widely known in the pulp and paper industry, he was associated with the pulp and paper industry in Canada for 17 years and then was General Superintendent of the Bucksport, Maine plant of the St. Regis Paper Co. At one time he was assistant to the manager of the eastern division of Scott Paper Co. at Winslow, Maine. Following his retirement, he served as a consultant for the nitrogen division of Allied Chemical Company.

He was a 50-year member of the Masonic Order and a member of the Anah Temple Shrine of Bangor.

Besides his wife, he is survived by a son, a daughter, a brother, a sister and seven grandchildren.

DONALD K. OTIS, '17

Donald K. Otis, '17 passed away in Worcester, Mass. on October 3, 1970. A life-long resident of Worcester, he was born on May 24, 1893, and while at WPI he majored in mechanical engineering. He was a member of Sigma Alpha Epsilon fraternity.

He was employed by the Union Water Meter Co. of Worcester for eighteen years as Assistant Treasurer and Sales Manager, and prior to his retirement, he was employed as the Employment Manager for Leland Gifford Co.

Survivors include his widow, Bertha A. Otis.

ELMER T. MITCHELL, '18

Elmer T. Mithcell, '18 died on December 10, 1970 in Greenwich, Conn. at the age of 76 following a long illness.

A native and life-long resident of Greenwich, he was born on November 2, 1894 and graduated from WPI with a degree in electrical engineering. He was a member of Lambda Chi Alpha fraternity.

A veteran of World War I, he worked for the Southern New England Telephone Co. after being discharged from the armed services, until he joined his family's firm, Peter Mitchell, Inc. in Greenwich. Active in many Greenwich affairs, he was a past President of the Lions Club, a member of the Greenwich Old Timers Athletic Association and had also served as President of the Greenwich Builders Association.

Survivors include a daughter, two sons, two sisters, four brothers and eight grand-children.

STANLEY W. ARTHUR, '20

Word has been received of the death of Stanley W. Arthur, '20 in South Pasadena, Florida on April 6, 1970. He was 73.

Born in Worcester, Mass, on January 30, 1897, he attended South High School before entering WPI in 1914. He graduated in 1920 with a BS degree in electrical engi-

neering, and while at WPI, he was a member of Lambda Chi Alpha fraternity.

Following graduation, Mr. Arthur was employed by the Edison Lamp Works of the General Electric Company of Harrison, N.J. for a year before joining the American Telephone & Telegraph Company in 1921. He retired from A.T.&T. in 1959 as Supervising Engineer at the Area Engineers Office at Cincinnati, Ohio. Mr. Arthur was a member of the Cleveland Engineering Society.

Survivors include his widow, Glady H. (Taylor) Arthur of Treasure Island, Florida.

HARRY C. MERRITT, '20

Harry C. Merritt, '20 died October 24, 1970 in Boston, Mass. at the age of 74.

Mr. Merritt was born in Cohoes, N.Y. on November 22, 1895 and he attended North High School before entering WPI in 1915. He graduated in 1920 with a BS degree in mechanical engineering and while at WPI he was a member of Theta Chi fraternity.

He was executive vice president and director of Downington Manufacturing Company, Downington, Pa., and vice-president of Black-Clawson Co., in Watertown, N.Y. Mr. Merritt was a Mason, a member of the Newcomen Society of North America and was a veteran of World War I.

He leaves his widow, Jeanette M. (Flynn) Merritt of Somers, Conn., one brother and several nephews.

RAYMOND S. WORTH, '23

Raymond S. Worth, '23 died unexpectedly on November 5, 1970 in Morrisville, Pa. He was 70. Mr. Worth was born on January 10, 1900 in South Portland, Maine and he entered WPI in 1919. While at WPI, he was a member of Theta Upsilon Omega fraternity.

During his business career, he was employed as a wire mill foreman by the American Steel and Wire Co. of Worcester, Mass., as a department head by the Wickwire Spencer Steel Co. and as a wire mill general foreman by the Bethlehem Steel Company in Baltimore, Md. He was a member of the Engineer's Club of Trenton, N.J., President of the Wire Association and member of the American Society for Metals, Delaware Valley Chapter, as well as being a member of the Masons. Prior to his retirement in 1967, he was employed for several years by the Colorado Fuel and Iron Corporation.

CLYDE N. MANSUR, '24

Clyde N. Mansur, '24 passed away on September 17, 1970 at his home in Leominster, Mass,

Born in Westminster, Mass. on February 26, 1903, Mr. Mansur attended Westminster

and Fitchburg High Schools and Cushing Academy before entering WPI in 1920. He graduated in 1924 with a BS degree in electrical engineering and was a member of Phi Sigma Kappa fraternity.

Mr. Mansur spent his entire business career, following his graduation, with the Simonds Saw & Steel Co. of Fitchburg, Mass. and at the time of his retirement, was a Director and General Sales Manager of that company. He was a 32nd degree Mason and a member of the Oak Hill Country Club of Fitchburg.

DUNCAN McINNES, '25

Duncan McInnes, '25 passed away in Bath, Maine on May 29, 1970 at the age of 69.

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Born in Bath on June 6, 1900, he graduated from Phillips Academy, Andover before entering WPI where he majored in civil engineering. He graduated from New York University and was an outstanding track star there. Phi Gamma Delta was his fraternity. Mr. McInnes retired in 1965 after serving for more than twenty-five years with the Bath Iron Works Corp., where he was supervisor of the outfitting department. Prior to joining the Bath Iron Works, he was a co-founder of the Seaboard Navigation Co., a marine freight service between Boston and Penobscot River ports.

He was a long-time civic leader in Bath and was reported to have devoted his energies and organizational abilities to every good cause in that community. At the time of his death, Mr. McInnes was President of the Bath Memorial Hospital, an original director of the Marine Research Society of Bath, a member of the executive board of the Maine Hospital Association, and was past president of the Bath Council of Churches.

Mr. McInnes is survived by his wife, Ellen Main McInnes, one son, a daughter, a brother, seven grandchildren and several nieces and nephews.

DR. CHARLES A. CHOQUETTE, '26

Word has been received of the death of Dr. Charles A. Choquette, '26, of Hamilton, N.Y. on March 14, 1967.

Born on May 13, 1902, Dr. Choquette attended Commerce High School in Worcester before entering WPI in 1922. He received a AB degree from Clark University in 1926 and advanced degrees from Cornell University in 1930 and 1935.

Dr. Choquette was a long-time resident of Hamilton, N.Y. and served on the faculty in the French department at Colgate University for many years.

ARMY COLONEL (RET) ROBERT J. FOLEY, '26

Army Colonel (Ret) Robert J. Foley, '26 died on January 18, 1971 in Walter Reed General Hospital, Washington, D.C. He was 67.

A native of Worcester, he was born on December 17, 1903 and attended Classical High School before entering WPI in 1922. He graduated in 1927 with a BS degree in electrical engineering.

He served 27 years on the City Public Service Board in San Antonio, Texas, and later was a consulting engineer for the Foreign Power Co. in Rio de Janeiro. He also served as consulting engineer for the Electric Bond & Share Co. in Ankara, Turkey and the Keban Dam Project in Ankara. From 1941 to 1946 he was an engineer operational officer under the late Gen. George W. Patton, and after the war he served in the Army Reserves, retiring in 1964. He was a member of the American Institute of Electrical Engineers.

He leaves his widow, two sisters and a brother all of Worcester.

SYDNEY F. SPENCER, '29

Sydney F. Spencer, '29 died in July, 1969. Born on July 27, 1906 in Boston, Mass., he attended Technical High School in Springfield, Mass. before entering WPI in 1925 where he was a civil engineering major. While at WPI he was a member of Phi Sigma Kappa fraternity.

A long-time employee of the New England Telephone & Telegraph Co., at the time of his retirement he was Sales Manager in the Springfield, Mass. office. Following his retirement, he moved to Yarmouthport, Mass.

PAUL R. OLSON, '32

Word has been received of the death of Paul R. Olson, '32 in the summer of 1966, Born in Worcester, Mass. July 18, 1909, he entered WPI in 1928, graduating with a degree in electrical engineering in 1932.

From 1933 to 1940 he was employed by the American Steel and Wire Co. of Worcester, Mass. and in 1940 he joined the Pratt & Whitney Division of the United Aircraft Corp. of Hartford, Conn. He had also been President of Atlas Engineering Services of New Haven, Conn.

JOSEPH T. WIGHT, '32

Joseph T. Wight died on May 27, 1967 in Montreal, Canada.

Born on May 3, 1907 in Augusta, Maine, Mr. Wight attended Chauncy Hall School and MIT before entering WPI in 1930. He graduated in 1932 with a BS degree in mechanical engineering. Among the positions which Mr. Wight held during his business career were those as vice-president of Maine Food Processors, Winterport, Maine for seven years, two years as President of Associated Fish Products Co. of Eastport, Maine and twelve years as eastern engineer for Standard Steel Corp. of Los Angeles, California.

He was active in the Masons and the Shrine and was a Director of the Winterport, Maine Library.

Among the survivors is his widow who resides in Winterport.

WILLIAM J. DENNING, JR., '34

William J. Denning, Jr., '34 passed away on January 20, 1971 in Washington, D.C. He was 57.

A native of Burlington, Vermont, he was born on June 1, 1912 and attended South High in Burlington. He entered WPI in 1930 and graduated in 1934 with a BS degree in Chemistry. He was a member of Sigma Alpha Epsilon fraternity.

At the time of his death, he was employed by the American Mutual Liability Insurance Company in Washington, D.C. as assistant manager. He had previously held positions as a claim manager for the company in Providence, R.I. and Upper Darby, Pa

He leaves his widow, two sons, a daughter and two brothers.

G. HARDING ALLEN, SIM '64

Mr. G. Harding Allen, SIM '64 died on September 23, 1970 in Augusta, Maine.

Born on January 18, 1912 in Barre, Mass., he attended Barre High School, Rhode Island School of Design and Clark University before entering WPI School of Industrial Management.

He held positions as works manager and director of purchasing at the Heald Machine Co. in Worcester and he also was a director of the Charles G. Allen Co. of Barre.

Surviving are his widow and two sons.

YOUR CLASS AND OTHERS



1907

Married: LEWIS HERBERT CARTER to Mrs. Katy Marshall on November 29, 1970 at Menlo Park, California.

1914

CHESTER M. INMAN was one of two hundred ASM members honored as the first Fellows of ASM for their distinguished contributions to the field of metals and materials. The Fellows Inaugural Convocation was held in Cleveland, Ohio.

1924

FORREST E. WILCOX retired from The Carborundum Company in 1968 and reports that he is now an income tax consultant with the H & R Block Co. of Rochester, N.Y.

1926

FREDERICK D. FIELDER has retired after 44 years with Westinghouse Electric Corp. in Sharon, Pa...The trustees of Union Hospital, Fall River, Mass., unanimously voted to name the new extended-care building in honor of the President of the hospital corporation, CHARLES M. MORAN. The Charles M. Moran Building is scheduled to open early in 1971.

1927

ROBERT W. GILLETTE writes that he retired as Division Engineer of Consolidated Edison Co. of N.Y. and is living in South Yarmouth, Mass.

1928

A. EVERETT LAWRENCE, manager of special studies in the treasurer's department of the DuPont Company, retired on December 31, 1970...FREDERICK G. SANDSTROM writes that he retired from Consolidated Edison Co. of N.Y. on June 1, 1970. He and Mrs. Sandstrom are having a home built in Sun City, Arizona.

1930

After 28 years at The Kelly-Springfield Tire Company, VERNON E. WADE, chief chemist — corporate, retired on September 30, 1970.

1931

ALBERT M. DEMONT, manager of professional manpower development for General Electric's Corporate Research and Development component, has been elected chairman of the Upper New York — Ontario — Quebec section of the American Society for Engineering Education...THE REVEREND WALKER T. HAWLEY became the Executive Secretary of the Board of Pastoral Supply, which has the primary purpose of assisting churches to secure the most effective pastoral service.

1934

JOHN A. BIRCH reports that he is now employed by F. R. Harris, Inc., of Great Neck, N.Y.

1935

ROBERT M. CAPE reports that he is the Chief Civil Engineer with Tams do Brasil in Rio de Janeiro...It was announced that THOMAS F. McNULTY was appointed to the position of vice president of manufacturing for the Hardware Division of Emhart Corp., Newington, Conn...HARVEY W. WHITE is an underwriting supervisor for the Lumbermens Mutual Casualty Co.

Married: AUSTIN B. COATES to Mrs. Ruth Vaughn on October 31, 1970. Austin reports that they are now residing in Auburn, Mass.

1936

ROBERT E. MAYNARD of Norton Company was elected to fill an uncompleted term on the Board of Directors of the Purchasing Management Association of Boston.



1937

W. ROBERT POWERS was one of the men honored by the publisher and editors of *Engineering News-Record* for his "report on fire in a New York skyscraper questioning whether modern buildings are truly fire-resistive."

1938

JOHN G. DESPO has been appointed to the new position of Director of Engineering for Granite City Steel Co. of Granite City, Illinois.

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TOICE

JOHN M. DRISCOLL has been made a vice president of Stone & Webster Engineering Corp. of Boston, Mass.

1940

STANLEY M. TERRY has joined the Maremont Corp., New England Group, in Saco, Maine and has been appointed Manager of Special Products.

1941

ARTHUR R. CURRAN is no longer in the USAF and is an Associate Professor at Youngstown State University, Youngstown, Ohio.

1942

Married: E. CURTIS AMBLER to Mrs. Mary L. McClure of Newington, Conn. on November 27, 1970.

GEORGE C. ANDREOPOULOS has been named Sales Manager-Food Machine Div. of the Manley Inc. of Kansas City, Mo...DELBERT A. BETTERLEY, President of Betterley Associates, has been elected to the Worcester Junior College Board of Trustees...PHILIP L. CAMP is now Branch Manager for the Idaho Nuclear Corp. of Idaho Falls, Idaho.

1944

FRED S. MOULTON is now residing in London, England where he is the Vice President of Newfoundland Refining Co., Ltd., of London.

1945

DR. CARL C. CLARK has joined the staff of the National Bureau of Standards,

Ellery B. Paine, '97

"Dear Sir: Your letter of February 5, 1971, is the second letter I have had from an Editor of the Journal. The other letter came to me when I was a graduate student at Worcester in 1897."

Ellery B. Paine is a remarkable person. He has had a long and full career, with many significant and unique achievements. He "retired" as head of the Electrical Engineering Department of the University of Illinois in 1944; but he is still active. At 95, he was recently appointed to a committee of five to determine the "Outstanding Electrical Engineering Student of 1970."

There is not nearly space enough here to describe Mr. Paine's accomplishments and career, but we would like to share a few of the highlights of his life with the *Journal's* readers.

Born in Connecticut, Paine entered WPI in 1893, graduating in 1897 and receiving a MS in 1898 and an EE in 1904. He worked for General Electric in Schenectady and for Lehigh Valley Coal Company in Pennsylvania. More interested in teaching, he became Dean of Technology at Stetson University in Florida, then became head of the Department of Physics and Electrical Engineering at North Carolina College of Agriculture and Mechanic Arts. In 1907 he went to the University of Illinois, where he was appointed head of the Department of Electrical Engineering in 1913. He held that position until he retired in 1944.

As a WPI graduate student, he designed and built a transformer that produced higher voltages than had ever before been produced by a single transformer. It was unique because the insulating material was kerosene oil, chosen after many tests. Later students tried to build a transformer of even higher voltage, but they were unable to get kerosene of the proper insulating quality. Paine's transformer was described in the August 1898, Electrical World Magazine. Several years later, WPI sold the transformer to a company building high voltage cables at a price equal to the total expenses of the E.E. department for research materials up to the time of the sale.

In 1921, Paine was able to hire Joseph T. Tykociner at the University of Illinois. Tykociner had distinguished himself by developing a radio communication system for the Russian navy, the first of its kind, but had left Russia because of the revolution.

Under Paine's direction, Tykociner attacked the problem of recording sound on film. In a surprisingly short period, he had solved the attendant problems. According to Paine, "it was decided that a public demonstration of this discovery should include a motion picture of and the production of my brief speech. Not being able to think of words worthy of this recording, I decided to repeat Lincoln's Gettysburg address." The demonstration was held on June 9, 1922. Paine was thus the first man to have his voice recorded on film.

Unable to interest any commercial firms in the process, they were told that "the lure of motion pictures is pantomime, and if sound came with pictures the industry



would be ruined." George Eastman was approached, and said he would not pay ten cents for the right to use films in recording sound. Because of the lack of interest, making the discovery seem worthless, Tykociner did not patent the method.

"Edison invented both motion pictures and the phonograph. He had a patent for operating the two devices together, but was unable to perfect a mechanism which held the two in exact synchronization. The Bell Telephone Company did develop such a device in connection with their system of sending pictures over wires. The first demonstration of this system was the transmission of a picture of Calvin Coolidge making his inaugural address in Washington, which was displayed in Chicago before the speech was ended. Then for publicity, a theater was rented in New York and motion pictures and phonograph records were operated in synchronism. It was found that the combination of pictures and sound were interesting to the general public."

That was in 1925. Only months later, Western Electric Company, a subsidiary of Bell, was manufacturing equipment for producing talking motion pictures. Within a year Western Electric had over 700 employees working on that alone. It was found that there were serious problems when the film was broken and spliced, however. When that happened, the synchronization was broken. To prevent this, the industry adopted — you guessed it — Tykociner's method developed under Paine's supervision. And not patented. An exhibit in the University of Illinois Engineering Library is now labeled Tykociner made motion pictures talk, but nobody would listen.

For many years, *Bridge*, the magazine of the Honor Society for Electrical Engineering Students, has published "Letters from Ellery." Paine originally wrote these, dealing chiefly with his boyhood days, for the younger members of his family.

In the words of President Hazzard, "It is impressive to me that an alumnus of the class of 1897 is still alive. But it is immensely more impressive to observe the clarity and logic of your writing. If we can turn out such graduates now as the college turned out in your day, we will be successful indeed." U.S. Dept. of Commerce, as Staff Consultant on Product Safety in the Product Evaluation Technology Division, Institute of Applied Technology...THE REVEREND EDWARD I. SWANSON has been designated editor-elect and director of all publications for the General Commission on Chaplains and Armed Forces Personnel...DR. ALBERT P. TALBOYS has been named Sanitary Engineering Director of the U.S. Public Health Service, Washington, D.C.

1946

WALTER F. CONLIN, JR. has been appointed chief engineer of Turner Construction Company in New York.

1946B

GARABED HOVHANESIAN has assumed new responsibilities as President & Managing Director of General Electric (U.S.A.) Housewares Private Ltd. and is living in Singapore.

1947

ANDREW T. GOETTMAN is now Plant Engineer for the Lorillard Corp. of Greensboro, N.C.

1948

ROBERT A. GREEN has been named vice-president — marketing at Avco Bay State Abrasives Division of Westboro, Mass...DR. CARLTON A. LANE has been appointed an Instructor in Mathematics at Leward Community College in Pearl City, Hawaii...DR. CHARLES A. WOODMAN has been appointed Science Director in the Braintree Public Schools, Braintree, Mass.

1949

LEONARD W. FISH, Director, Planning for the American Gas Association, Inc., has been transferred from the New York office to Arlington, Virginia...DANIEL L. McQUILLAN is President of the Aerovox Corp. of New Bedford, Mass.

1950

LEO A. LYNCH, JR. is still with General Electric Co. He is Manager — Sales in Erie, Pa... JOHN W. PEIRCE, Manager, Price Policy and Marketing Information for The Foxboro Co., has announced his candidacy for selectman in the town of Sherborn, Mass.

1951

THOMAS M. JUNE writes that efter 3% years in Australia working for Koppers Co., Inc., he is returning to their Pittsburgh office... JOSEPH S. VITALIS, JR. is with the Mitre Corp. of Belleville, Illinois... AL-

FRED J. WHEELER, a Principal Engineer with Micro State Electronics, Inc., has been transferred from the Murray Hill, N.J. office to the office in Waltham, Mass.

1952

RAY A. MANN, Representative for the Crown Container Corp. and Foam Products Corp. of Spencer, Mass., is running for the office of selectman of that town.

1953

WILLIAM H. NAGEL writes that he is the Associate Marketing Manager for Fischer & Porter Co. of Warminster, Pa...It was announced that DONALD G. POST has been promoted to Director of Sales Administration of Sweetheart Plastics, Inc., of Wilmington, Mass.

1955

DR. HOWARD J. DWORKIN is with the radioisotope unit of the University of Toronto, Princess Margaret Hospital, Toronto, Canada.

1956

THOMAS E. STAMOULIS has been appointed Manager of the Sonobuoy Systems Business Area at Raytheon Co., Submarine Signal Division in Portsmouth, R.I.

1957

ALAN J. and Audrey CARLAN write that they are living in Palos Verdes, California, where Alan is operations manager at International Rectifier Corp. in El Segundo and Audrey is an assistant professor of mathematics and computer sciences at Southwest College, Los Angeles... CHARLES M. STASEY, Assistant General Manager of Itek-Kingsbury Co. of Norwood, Mass, has been awarded a U.S. patent for his invention, in association with two other employees of Itek, of an automatic printer. The system has the capability of controlling the color balance of a duplicate print from original film strip. . . CARL L. URETSKY is President of TDR Electronics of Bristol, R.I.

1958

Married: ARTHUR P. McGOWAN, JR. to Miss Bonnie D. Waters of Farmington, Conn. on November 21, 1970.

HENRY ALTENBRAND is an Engineering Assistant for the Providence Gas Co. in Providence, R.I... CHARLES B. CUSHMAN writes that he is a Golf Club Design Engineer for Wilson Sporting Goods, Inc. of River Grove, Illinois... JAMES S. DEMETRY has left the U.S. Navel Post Graduete School in Monterey, Celifornia, and is an Associete Professor at WPI in the

E.E. department...ROGER A. LITMAN is now Production Manager of KEV Electronics Corp. in Wilmington, Mass.

1959

Born: To Mr. and Mrs. JOHN A. McMANUS, a daughter, Christine Elizabeth, on February 4, 1970. John is Director of the Water Dept., New Britain, Conn.

MORGAN S. ELY is no longer with the U.S. Navy. He has returned to college as a graduate student at Utah State University, Logan, Utah... MAJOR GEORGE J. NELSON has returned from thirteen months' duty with the 144th Signal Battalion stationed in Germany. He will be home for ten days before reporting for his second tour assignment in Vietnam. While serving in Germany, Major Nelson received the Army Commendation Medal for Meritorious Service.

1960

Married: ROBERT F. KASPROW to Miss Julia Carol Reynolds of Haddam, Conn., on July 18, 1970.

DR. ROBERT A. CONDRATE, Assistant Professor of Spectroscopy at the State University College of Ceramics at Alfred University, has been elected a Fellow of the American Institute of Chemists...DR. ARMAND P. FERRO is working for General Electric Co. of Schenectady, N.Y. as an electrical engineer... DAVID B. HALEY is Section Head - Product Development in the Molecular Imaging Research Dept. of Plastic Coating Corp. in Holyoke, Mass. He is currently enrolled in the Western New England College graduate program. . . LOW-ELL M. HATTORI is a Finance Administrator for Fortin Laminating Division of Monogram Industries in San Fernando, California...RONALD J. RICHARD is now Assistant Professor in the Physics Dept. of St. Benedict's College at Atchison, Kansas... GEORGE E. SCHILLINGER is Assistant Professor in the Mathematics Dept. of New England College, Henniker, N.H... CHARLES A. STEVENS who earned his MS in ME at WPI, is an Assistant Professor, Dept. of Mechanical & Aerospace Engineering at the University of Missouri, Columbia, Missouri...PAUL S. STRA-MESE writes that he has become Vice President of the Stremese Construction Inc. of Northampton, Mass, and that he and his family were moving from Maryland to Northampton.

1961

Married: SETH N. ARAKELIAN to Miss Katherine Proko of Worcester, Mass., on November 15, 1970. He is an engineer with the San-Vel Co., Littleton, Mass... GEORGE M. YULE to Miss Jessie T. Cortez of Sen Jose, Californie on August 8, 1970.

Music Hath Charms

and transistors and IC's too.



When he was a senior at WPI, ALAN R. PEARLMAN, '48, had a dream. It was that someday he would develop an electronic device to produce music with all of the subtleties and control of conventional instruments in the hands of artists.

His dream has come true. In December, as president of Tonus, Inc., of Waltham, Pearlman announced at a Boston press conference the development of the ARP Synthesizer. In the demonstration, the device did indeed duplicate the musical qualities of clarinets, trumpets, gongs, and other instruments. But it did much more. The synthesizer can produce musical effects which are impossible in other instruments.

"This is not just a laboratory curiosity," says Pearlman. "The ARP Synthesizer meets a real need in the musical world. First of all, it is a new instrument suitable to concert work in all types of musical fields. Its greatest application will probably be in schools where music and the theory of music are taught. The teacher can readily demonstrate the relationship between subjective musical tone quality, or 'timbre,' and the physical sound spectrum of overtones and fundamentals. For the composer, the synthesizer is a great boon, for he can play the part of each instrument on the standard piano-like keyboard and then combine the parts on a multitrack tape recorder to hear all the parts together."

Costing about as much as an American compact car, the ARP Synthesizer folds up to the size of a large suitcase for carrying. Tonus also makes a larger studio model costing about \$8000. This one has even more versatility.

An amateur himself, Pearlman developed the first crude model of the synthesizer as a student project at WPI. Electronic instruments, such as the organ, were available at that time but they did not have the ability to control the note once it was played. "It was like turning a light switch on or off," he noted.

An electronic music synthesizer consists of the following types of circuits:

- 1. Generators of "raw waveforms, such as white noise, and regular periodic waves including sine, triangular, square, pulse, and sawtooth waveshapes."
- 2. Modifiers, such as electrically variable wave filters, which emphasize or suppress various regions of the audio spectrum; variable amplifiers, which produce dynamic changes in waveform amplitude; and modulators, which combine several waveforms to produce new timbres containing sidebands which impart strange coloration to the sound.
- Controllers, such as low-frequency periodic waveform generators, aperiodic transient generators, keyboard controllers, and sequential voltage generators.

Put them all together, and you have an instant do-it-yourself instrument, with which you can invent your own sound quality and modify it at will. In addition to a standard keyboard, which allows the player to create melodies, the instrument can play itself in either a repetitive, or random manner. The control panel contains graphic symbols which make the functions self-evident at a glance. Modifications in sound are made with slider controls, and the complexity of playing is easily mastered by a person without a technical background.

Pearlman's career since graduation has been a progression of increasingly important positions in the electronics industry. He was formerly vice president and treasurer of Nexus Research in Canton, Mass. He kept working as time permitted on his dream of a synthesizer. When he became president of Tonus in 1969, he was able to direct corporate efforts toward the project with the firm belief that the world was ready for it. There are other synthesizers on the market, but he feels that his has many advantages over them, particularly in the quality of sound and the stability of tuning.



"I think he's a little weak with his potentiometers but the oscillating feedback is inspired."

HAROLD W. BERK is a David Ross Fellow in the Bionucleonics Dept. at Purdue University, Lafayette, Indiana...DR. RALPH F. GUERTIN is teaching at Rice University in Houston, Texas. He is an Assistant Professor of Physics...STEPHEN W. KLEIN, a division chief in the Army Electronics Command Systems - Cost Analvsis Office, has been selected by the Department of Defense to attend the 15-month Defense Systems Analysis Education Program conducted by the University of Rochester and the Center for Naval Analysis, Washington...JOHN F. OGOR-ZALEK writes that he was just transferred from New Jersey to Long Beach, California. John is a plant manager for Tenneco Chemicals Inc. The Ogorzaleks have purchased a home in Seal Beach, California for themselves and their two sons, John William, 31/2, and Thomas Holder, born February 24, 1970... KENNETH I. PARKER is District Manager of Sales for the Gilbane Building Co. of Providence... FREDERIC A. STE-VENS, vice president of Vantage Computer Systems, has announced their new offices will open in Hartford, Conn. Vantage will offer data processing consulting and programming services.

1962

DR. KENNETH J. ANUSAVICE was awarded a doctorate by the University of Florida. He is a Technical Analyst for the U.S. Atomic Energy Commission, Savannah River Operations Office, Aiken, S.C... CLIFFORD G. ENGSTROM writes that he recently changed jobs to take a position of Electrical Engineer for the Middleboro, Mass., Dept. of Gas & Electricity... JOSEPH D. LEBLANC is a Reactor and Computer Supervisor with the Maine Yankee Atomic Power Co. in Wiscasset, Maine. . . JOHN C. RUPPRECHT has been transferred by Ingersoll-Rand Co. to Southfield, Michigan, where he is a Senior Sales Engineer. . . The United States Patent Office has announced that RICHARD M. SHAR-KANSKY has passed examination for registration to practice law before the agency... WALKER T. THOMPSON received his MS in Industrial Engineering from Newark College, Newark, N.J... JOSEPH H. WOLEN-SKI is currently enrolled in the Babson College master of business administration degree program.

1963

Married: FRANCIS E. KENNEDY, JR. to Miss M. L. Pattrawadi Chayangkura of Bangkok, Thailand on August 14, 1970. Francis is a doctoral candidate at Rensselaer Polytechnic Institute, Troy, N.Y.

DR. ALFRED H. BARRETT is a Senior Research Engineer at Delco Electronics Div., General Motors Corp. of Goleta, California... CHARLES M. BECK II writes that he is an analytical chemist with the State of Maryland Dept. of Water Resources in Annapolis, Md...DR. RICHARD F. DOMINGUEZ received his PhD from Oregon State University in 1970 and is now an Assistant Professor of Ocean Engineering at Texas A & M University in College Station, Texas. . . LESLIE J. HART is a law student at Suffolk University, Boston, Mass...STANLEY P. SKOLA, JR., was transferred by the Goodyear Tire & Rubber Co. to Danville, Virginia, where he is a staff engineer... KENDAL B. TURNER is now with Anatech, Inc., of Groton, Conn. and is a system engineer...CAPT. JAMES A. VELEZIS received an MS in Civil Engineering from Texas A & M University in May, 1970, and is now with the U.S. Army, 46th Engineering Battalion (Construction).

1964

Having finished two years as an instructor in the Army, RICHARD R. BROWN is now handling public relations for Data General Corp. in Southboro, Mass...AL-LEN W. CASE, JR., received his MS from WPI and is now employed as a system engineer for General Electric Co., Research and Development Center in Schenectady. N.Y... Working as a telecommunications officer for the U.S. State Dept. in the Embassy of the United States, Manila, Republic of the Philippines, is F. CLARK GESSWEIN...BARRY J. KADETS is an operations research analyst for Stop & Shop in Boston, Mass. He and his family are living Norwood, Mass...DR. PAUL A. LILIENTHAL is an engineer with the U.S. Army Cold Regions Research & Engineering Lab. in Hanover, N.H... WALTER W. MASSIE is with the Department of Civil Engineering, Delft University of Technology, Delft, Netherlands...Working as a financial analyst for General Electric Co. in Lynn, Mass., is JOHN T. O'KEEFE... WILLIAM T. SWANSON is now assistant office manager for See Neefus, Inc., in Riverhead, N.Y.

1965

Married: RICHARD G. SKOGLUND to Miss Susan E. Todd of Oaklyn, N.J., on October 17, 1970. They are residing in Allen Park, Michigan, where Dick is coowner of Ramchargers Racing Engines Inc...JORDAN M. DERN and Mrs. Dern announce the adoption of a daughter, Robin Elise, born May 31, 1970. Jordan is a Process Engineer for Koppers Co., Inc., in Fallansbee, West Virginia.

MICHAEL W. BOYD received his MA in Mathematics in 1968 from the State Univer-

sity of New York in Binghamton and is now a graduate assistant at that university...DONALD C. CARLSON is now working in Tokyo, Japan for the Torrington Co. as a Chief Liaison Engineer...SURESH V. CHOKSI received his MS in Chemical Engineering from WPI in 1968 and now writes that he is a chemical engineer with Choksi Brothers Ltd. in Bombay, India... CHARLES H. DUFOUR received the highest score in Rhode Island on the Engineerin-Training Examination. This examination is part of the state requirements for becoming a licensed Professional Engineer. Charles has been employed at the Cottrell Company since 1965 and is a development engineer...ROBERT D. KLAUBER writes that he has just returned from a year-long trip around the world and is now in graduate school at Princeton University studying for his PhD...THOMAS R. LEE is a graduate student at the University of Maryland. He received his MSEE from there in June, PETER E. McCORMICK writes that he is still with IBM but is transferring to the Components Division's new location in Manassas, Virginia. He says, "I will be working there as a Project Engineer in a logic circuit design area."... LT. GEORGE W. MITSCHANG is at the U.S. Naval Post Graduate School in Monterey, Calif... HOWARD G. SACHS is now a Research Fellow at Carnegie Institute in Baltimore. Md. . . . ALFRED G. SYMONDS is still with General Electric but he has been transferred from Maryland to Pittsfield, Mass... DR. DONALD K. TIBBETTS writes that he is an Assistant Professor of Chemistry at Beaver College, Glenside, Pa.

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1966

Married: JEFFREY W. WICKERI to Miss Jacqueline M. Dion of Worcester, Mass., on December 5, 1970. Jeffrey is employed as a traffic engineer for the New York State Dept. of Transportation in Poughkeepsie.

Born: To Lt. and Mrs. PETER J. KUDLESS, a daughter, Allison Marie, on December 14, 1970. Peter is a lieutenant in the U.S. Navy stationed at Newport, R.I.

JAY J. BOTOP is employed by the Union Carbide Corp., Linde Division in Birmingham, Alabama as a sales representative...JAMES M. FIFE is now located in Houston, Texas working for the General Electric Co. as a sales engineer...DR. JOHN H. LAUTERBACH received his PhD from Ohio State University and is now working for Union Carbide Corp. in Bound Brook, N.J...RCA employs LOUIS G. MATTE, JR., in Burlington, Mass., as a member of the technical staff...DILIP K. MISTRY is a project engineer with Ingersoll-Rand, located in Princeton, N.J... ANSON B. MORAN reports that he is now working for IBM in Oakland, Calif., as a

marketing representative... After being released from the United States Navy, JOHN J. MORAWSKI has returned to work for the Niagara Mohawk Power Corp. in Albany. N.Y., as assistant to the planning supervisor... DONALD J. MUGNAI writes that he is living and working in Rockville, Md. He is employed as a research worker with sonar systems at Challenger Research, Inc...KYLE J. ONDRICEK, who is employed by Esso Standard, has been transferred to Naha, Okinawa, where he is coordinator of process planning. . . Polaroid Corp. employs DONALD J. PEARSON as a scientist in Cambridge, Mass. . . RICHARD J. PIASECKI reports that he now works for the Karl Koch Erecting Co. in Carteret, N.J. as a construction supervisor. . . Employed as a teaching assistant in the M.E. Department at the University of New Mexico is CHARLES C. ROBERTS, JR. . . ROBERT J. SCALZI is a mathematician in the Defense Department, Washington, D.C... JOHN P. SEFERIADI is a teaching assistant at the College of Architecture of the University of Washington while studying for his M. Arch... The National Air Pollution Control Administration in Raleigh, N.C., employs GEORGE R. STEVENS as a chemical engineer...WILLIAM E. SULLIVAN, JR., is a member of the technical staff at Computer Sciences Corp. in Cranford, N.J. and lives in Parlin, N.J.

1967

Married: ROBERT G. LAMONTAGNE to Miss Eleanor M. Bigott of Worcester, Mass., on November 21, 1970. They are residing in Worcester where Robert is an instructor at Quinsigamond Community College...ROBERT C. YOUNG to Miss Pamela M. Brosnihan of Worcester, Mass., on October 25, 1970.

LT. PHILLIP J. CLARK is stationed in the Marianas with the U.S. Navy. . . CAPT. STEPHEN B. COTTER is an instructor pilot at Moody AFB, Georgia. He is assigned to a unit of the Air Training Command... ROY P. LINDQUIST is a Briefing Officer, 1/Lt, in the U.S. Army at Fort Bliss, Texas. Lt. Lindquist is at the Air Defense School at Fort Bliss...LT. FRANK D. MANTER, U.S. Army, Viet Nam, received the Bronze Star for outstanding meritorious service in connection with military operations against hostile forces in Viet Nam...CHRIS-TOPHER E. CRIDGE writes that he is self-employed at 1464 Makefield Rd., Morrisville, Pa... DR. ROBERT J. CORNELL has been made a Senior Chemist at the UniRoyal Inc., Chemical Division in Naugatuck, Conn...JOHN B. FELDMAN writes that he is an Engineer in the Chemical and Electrochemical Processes Division of General Electric Co., in Lynn, Mass. RAY-MOND J. FORTIN is on the technical staff of the Mitre Corp., at Scott AFB in Illi-

nois... RICHARD M. KING is no longer in the service and is employed as a project engineer at the Permanent Label Corp. of Clifton, N.J...STEPHEN R. LUBER received an MBA from Harvard University in 1969 and is now studying at Stanford University in California... ROBERT G. McANDREW, no longer in the Navy, is an Engineer for Babcock & Wilcox Co. in Lynchburg, Va...DENIS F. McQUILLEN received his MS from WPI in June and is now employed as a project manager at the Standard Refrigeration Co. in Puerto Rico...RONALD A. MUCCI has been awarded a doctoral study grant by his employer, the Raytheon Co., Submarine Signal Division. He will study at the University of Bhode Island and will concentrate on developing his capability in the new technologies...JOHN J. PERRONE is now an engineer with Western Electric Co. in North Andover, Mass... CHARLES F. PROCTOR has been in Viet Nam since June. He is a gas-turbine-engineer consultant to the U.S. Army and employed by Avco Lycoming Division... HOWARD H. SHORE writes that he is a law student at the University of San Diego in California. . . JOHN E. SONNE writes that he will be completing his first year in the Veterinary School of the University of Pennsylvania in May.

RICHARD ARTHUR SYMONDS completed his Army tour and is now employed by the Westinghouse Electric Corp. in Lester, Pa... DUNCAN C. VANDERBERG is no longer with the U.S. Army and is now a plant engineer with the Clorox Co. in Brighton, Mass.

1968

Married: RICHARD J. CAPRIOLI to Miss Marie L. Natale of Worcester, Mass., on October 25, 1970. Mr. and Mrs. Caprioli are living in Indian Orchard, Mass...WILLIAM F. DUNHAM, JR. to Miss Nancy M. Dion of Lynn, Mass., on November 28, 1970. Bill is a chemical engineer at the U.S. Naval Ordnance Station, Indian Head, Md... JOSEPH F. OWENS, III to Miss Linda Baker of Syracuse, N.Y., on May 30, 1970. He is currently at Tufts University studying for his PhD...DAVID H. RICE to Miss Linda Friedberg of Bronx, New York on July 18, 1970...JACK SIEGEL. MICHAEL PAIGE and PETER SALTZ ushered at the wedding. David received an MS from the University of Pennsylvania and is now employed by American Telephone & Telegraph, Long Lines, in Wayne, Pa... ROBERT L. SMITH to Miss Alice H. Renaud of Winooski, Vermont, on October 10, 1970. Bob is a systems engineer with IBM in Essex Jct., Vermont.

Born: To Lt. and Mrs. JOHN A. CAPRIO, a daughter, Kerry Lynn, on November 27, 1970. LT. RICHARD KUNG has been transferred to Oklahoma City Air

Force Station, Okla. with the Air Force Communication Service.

Members of the class serving in the Army are: GEORGE R. BAZINET with the 529th Ordnance Co...RICHARD BRODEUR is stationed in California...CAPT. CHARLES T. CHASE, after serving two years in Germany, has been reassigned to Viet Nam ... LT. ROBERT H. DEFLESCO, JR. in Viet Nam as a fire direction officer in an artillery battery...LT. JOHN R. HILYARD stationed at Ft. Clayton, Canal Zone. . . SP/4 PETER L. MARZETTA at Fort Bliss, Texas... The bronze star has been awarded to 2/LT. WILLIAM E. NEWTON who is serving in Viet Nam. LT. JAMES M. PALMER recently received the Army Commendation Medal while serving with the 61st Artillery in Germany... DOUGLAS A. RILEY is Company Commander with 93rd Engineering Battalion Construction.

Among those in the United States Navy are: VICTOR V. CALABRETTA, JR., promoted to LT. (J.G.) who is officer-in-charge of a Seabee team which will deploy soon for the Pacific Islands...LT. (J.G.) EDWARD F. O'HARA stationed aboard the USS Barney.

ENS. PETER S. HEINS is a pilot for the Coast Guard and flies search and rescue missions from Opa Locka Airport, Fla.

PAUL J. ARRUDA, who received his MS from the University of Delaware is employed by E.I. duPont in Deepwater, N.J. . . State Mutual Life Assurance Co. of America employs RICHARD L. COLLINS as an actuary...PAUL D. EICHAMER is with Esso Research & Engineering in Florham Park, N.J. . . COBB S. GOFF has been appointed assistant director of the MIT Practice School...RONALD F. GOLAS-ZEWSKI is a statistician with the Braftco Corp. . . The Benwill Publishing Corp. has JOSEPH F. HILYARD as its Assistant Editor of Circuits Manufacturing Magazine. . . ROUMEN B. KORDOF is employed by Connecticut General Life Insurance Co. in Denver, Colorado... The City of Los Angeles, Calif. employs HENRY E. Mc-GUIRE as a Sanitary Engineer...SHEL-DON A. MITTLEMAN is an Associate Engineer with Raytheon Corp. in Portsmouth, R.I... Vitro Laboratories of Silver Spring, Md. employs THOMAS PASIERB... RAYMOND F. RACINE who works for General Electric is now living in Amherst, N.H...TIMOTHY J. SCHAF-FERNOTH writes that he recently received his MS from the University of Maine and is living in Granville, N.Y. and is a project engineer with Rist-Frost Associates... Stone & Webster Eng. Corp. employs DAVID R. SPEIRS as a construction engineer in Boston and he and his family are now living in Melrose, Mass... CARLOS N. SPITZ is plant manager for Industrias Hidromac de Colombia in South America.

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1969

Married: GEORGE G. DAVENPORT, III to Miss Lynn L. Larrabee of West Boylston, Mass., on August 8, 1970. R. CRAIG PASTORE was best man, and JAMES W. HAURY was one of the ushers. The Davenports are residing in New Haven, Conn., where George is an electrical engineer with United Illuminating Co... THOMAS M. GWAZDAUSKAS to Miss Susan M. Grigaitis of Hudson, Mass., on October 24, 1970. Tom is a chemical engineer with Humble Oil and Refining Co. in Bayway, N.J. He and Susan are living in No. Plainfield... CHARLES D. HARDY. JR. to Miss Catherine A. Wetherhead of Holden, Mass., on October 17, 1970. The bride is the daughter of Sidney B. Wetherhead, '45. The best man was R. CRAIG PASTORE, and among the ushers were DAVID E. JERVIS and Philip C. Rader, '70. Charlie is a test engineer for General Dynamics in Ouincy, Mass. He and Cathy are living in Braintree... Navy Ens. DAVID E. KILPATRICK to Miss Judith E. Kreutler of Scituate, Mass., on October 10, 1970. They are residing in Saratoga Springs, N.Y., where Dave is stationed...ERIC H. NICKERSON to Miss Jane F. Vance of New Canaan, Conn., on August 22, 1970. One of the ushers was MICHAEL W. NOGA. Eric and Jane reside in Cos Cob, Conn. Burndy Corp. in Norwalk employs Eric as a mechanical engineer...TODD R. TUOMI to Miss Valerie J. King of Bristol, Conn., on October 10, 1970. Todd is an assistant electrical engineer for Connecticut Light & Power

Co., Enfield, Conn. He and Valerie make their home in Ellington...PETER R. WALSH to Miss Mary Elizabeth Millett of Whitman, Mass., on September 18, 1970. Among the ushers was MICHAEL G. OUELLETTE. Pete is a service engineer with General Electric Co. in Schenectady, N.Y...PAUL C. WILSON to Miss Elizabeth E. Hadley of Wolfeboro, N.H., on August 29, 1970. EDWARD A. OLSZEWSKI, JR., '68, was best man. The couple is living in Worcester, Mass., while Paul pursues graduate studies at WPI...BARRY N. SHIF-FRIN writes that he was married to Miss Ronda L. Freeman of Worcester on June 28, 1970. Barry is an Associate Engineer with the IBM Corporation in Endicott, N.Y.

Born: To Mr. and Mrs. WARREN F. FOLLETT, a daughter, Heidi Lynn on October 19, 1970. Rick is an electrical engineer with Hughes Aircraft Co., Culver City. California.

The following '69'ers are in the United States Air Force: 2/LT. WARREN L. ANDERSON has been assigned to Reese AFB, Tex., for pilot training...Silver wings have been awarded to 2/Lt. CRAIG L. MADING upon graduation from navigator training at Mather AFB, Calif. Craig has been assigned to Nellis AFB, Nev., for flying duty with a unit of the Tactical Air Command...Vance AFB, Enid, Okla., is the location of 2/LT. DOUGLAS A. NELSON, a pilot.

Members of the class now serving in the Army are: 2/LT. CHARLES T. DOE, at Ft. Sill, Okla.; PETER T. GROSCH, in Viet

Nam with the Corps of Engineers; LT. CLIFFORD M. OBERTUCK, near Schwetzingen, Germany, with the strategic communications command, operations branch.

ROBERT C. BALCER received his MS in aeronautics from Caltech in June, 1970, and is now with IBM Corp. in Glendale, Calif., as a marketing trainee... Pratt & Whitney Aircraft, E. Hartford, Conn., is CHESTER D. BLACKMAN, JR.'s employer, He is a materials engineer and makes his home in Manchester... CAMERON P. BOYD is a teacher at Nettle Elementary School in Haverhill, Mass., where he also makes his home... GREGORY B. ENZ, who lives in Attleboro, Mass., is a planning engineer with New England Telephone & Telegraph Co. in Boston... The west coast sales representative and Los Angeles district sales office manager for Hooker Chemical Corp.'s Durey Div. is JEROME B. FLYNN, JR. Jerry lives in Marina Del Rey...Another member of the class employed by Pratt & Whitney Aircraft in E. Hartford, Conn. is MICHAEL GAN. Mike is a design engineer, and his home is in Manchester... DOUGLAS J. GEORGE is in the management training program at General Electric Co. in Lynn, Mass. Doug makes his home in Needham...It's DR. DAVID G. HEALEY now. Dave received his PhD from the University of Maine last mer...ANDREW J. HEMAN writes that he is a graduate student at MIT in Cambridge... LAWRENCE KATZMAN is doing something about air pollution. He is a technical assistant at Bethlehem Steel

Corp.'s Air Pollution Laboratory, Sparrows Point, Md. Larry lives in Towson... BHIKHUBHAI M. MISTRY, MS, is a structural engineer with Jackson & Moreland. Inc. in Boston, Mass. Bhikhu makes his home in Brookline... Also located in Boston, MICHAEL J. PUNCHEKUNNEL, MS, is a research assistant with Boston Biomedical Research Institute. Mike lives in Cambridge... FRANCIS W. SKWIRA, MS, writes: "I am now on education leave from General Electric, and have initiated studies toward a PhD degree in mechanical engineering at the Georgia Institute of Technology. My studies are being financed under a N.A.S.A. Complex Systems Design Traineeship, which I have been granted for three vears."... We have learned that STEPHEN W. SPAKOWSKY is a chemical engineer with Eastman Kodak Co., Rochester, N.Y... The new building superintendent at Southern New England Telephone Co. in New Haven, Conn. is LEON F. WENDEL-OWSKI. He was a staff assistant at the time of his recent promotion. Leon resides in West Haven...J. F. White Contracting Co. in Newton, Mass. has a project engineer in the person of WILLIAM L. WILLAND. Bill's home is in Worcester.

1970

Married: OLIVER G. BRIGGS, JR. to Miss Carol Lee Davis of Holden, Mass., on September 26, 1970. They are residing in Baltimore, Md., where Oliver is an assistant

project engineer with Koppers Co... PETER A. CRONIN to Miss Arlene Theresa Ferris of No. Reading, Mass., on August 30, 1970. The best man was JOHN J. LYONS. Peter has a teaching fellowship under the doctorate program at Boston University...DANIEL A. CZERNICKI to Miss Mary Beth Denn of Albany, N.Y., on October 17, 1970. One of the ushers was BRUCE S. ROBINSON, Mr. and Mrs. Czernicki make their home in Narragansett. R.I. Dan is a mechanical engineer at the Naval Underwater Systems Center in Newport...WILLIAM J. HAKKINEN to Miss Virginia M. Jean of Gardner, Mass., on October 25, 1970. The ushers were JAMES G. HANNOOSH, JOHN P. DEMASE, and LAURENCE P. VALLEE. Bill is a production engineer with Chas. Pfizer and Co., Groton, Conn., and he and Virginia are living in New London... JERRY L. JOHN-SON to Miss Lisa L. Sjosten of Holden, Mass., on August 29, 1970. Among the ushers was JOEL P. GREENE, '69, and CRAIG D. OLMSTEAD was best man. The couple resides in Worcester, where Jerry is a graduate student at Holy Cross College... ROBERT J. KELLEY to Miss Marie C. Voghel of Waterbury, Conn., on October 9, 1970. Bob is an engineer with Southern New England Telephone Co. in New Haven, Conn. He and Marie live in Waterbury...GERALD E. PIEPIORA to Miss Cathleen A. Bonnette of Turners Falls, Mass., on October 17, 1970. A resident of

Reisterstown, Md., Gerry is an engineering field representative for Freeimire and Associates in Baltimore...MARC E. SCHWEIG to Miss Ellyn A. Handorff of Chelsea, Mass. Marc is an electrical engineer at Western Electric Co., No. Andover, Mass... RICH-ARD H. STEEVES to Miss Kathleen A. Kaegebein of Findlay, Ohio, on June 7, 1970. JOHN W. SZTUKA, JR. and THAD-DEUS J. LELEK were two of the ushers. The couple's home is in Acton, Mass., and Dick is employed as a manufacturing engineer by W.R. Grace & Co., Cambridge... LAURENCE P. VALLEE to Miss Janet A. Hirons of Gardner, Mass., on July 19, 1970. Among the ushers were JAMES G HAN-NOOSH and WILLIAM J. HAKKINEN. Larry and Janet are living in Willimantic. Conn., while Larry pursues his master's degree in structural engineering at the University of Connecticut at Storrs...JOHN W. SZTUKA, JR., to Miss Lynn M. Farrell of Worcester, Mass., on December 5, 1970. Among the ushers was RICHARD H. STEEVES. John is a technical sales representative for Hercules, Inc. in Chicopee, Mass. He and Lynn make their home in Agawam...ALAN F. HASSETT to Linda L. Hudson of Westfield, N.J. Alan is employed as a civil engineer at O'Brien & Gere of Syracuse, N.Y.

Born: To Mr. and Mrs. ROBERT PETTI-ROSSI, a son, Barry Joseph, on January 1, 1971. Barry was the first baby born in Greater Lawrence, Mass. in 1971 and was

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Cincinnati Milacron-Heald Corp. Worcester, Mass. 01606 the subject of an article in the local newspaper. As Barry's parents, Bob and Nancy received savings accounts and other useful gifts from local merchants. Bob is an electrical engineer with Western Electric Co.

The following members of the class of '70 are in various branches of the service: DONALD F. BOLDUC is a second lieutenant in the U.S. Army Finance Corps at Ft. Benjamin Harrison, Indianapolis, Ind... PETER J. DENONCOURT is a Seaman in the U.S. Coast Guard...Army 2/LT. THOMAS G. MALLORY is stationed at Ft. Benning, Ga... Airman JAMES A. RYAN is with the USAF Communications Electronics Systems at Keesler AFB, Miss... Bechtel Corp. in San Francisco, Calif. employs JOSEPH BECHER as an electrical engineer. He lives in Walnut Creek... BERNARD J. DODGE is with the Peace Corps, teaching high school mathematics in Sierra Leone, Africa...STEPHEN G. KOSH-GARIAN is enrolled in the Babson College master of business administration degree program. Babson is located in Wellesley, Mass...PETER F. LALOR is a research assistant at the University of Connecticut. Storrs. He and his wife, Mariellen, make their home in Willimantic...Pratt & Whitney Aircraft's Florida Research and Development Center in W. Palm Beach employs RAYMOND C. PAULK as a design engineer. Ray lives in Lake Park, Fla... No. Andover, Mass. is the location of MASON B. PECK. He is an engineer with Western Electric Co... DAVID A. QUAGLINI, JR. is a mechanical engineer with the National Security Agency at Ft. George G. Meade, Md. Dave and his family live in Laurel... RICHARD B. ROCK, who makes his home in Marlton, N.J., is a project engineer with United Engineers & Constructors, Inc., Philadelphia, Pa... Buffalo, N.Y. is the location of BRUCE E. SAMUELSON, who is a sales engineer with Buffalo Forge Co...E. RICHARD SCHOLZ is employed by the Massachusetts Engineering Dept. of New England Telephone & Telegraph Co., Framingham, Mass. He and his wife, Irene, live in Woonsocket, R.I...LOUIS W. ZITNAY, who lives in Hillside, III., is an assistant project engineer with Turner Construction Co. in Chicago... Norton Co.'s Machine Tool Div. employs FRANK J. ZONE, JR., MS, as a research engineer. Frank makes his home in Worcester... RICHARD F. ABRAMS is a process development engineer with W.R. Grace & Co., Polymers & Chemical Div., in Cambridge, Mass. Dick's home is in Wakefield... Sunny California is the location of PHILIP D. BARTLETT, JR. Phil is with Southern California Edison Co. in Los Angeles... Army Pvt. DANIEL K. BREEN recently completed an eight-week military police course at the U.S. Army Training Center, Ft. Gordon, Ga... Also in the Army, 2/LT. RONALD J. DLUGOSZ recently completed a nine-week ordnance officer basic course at the Army Ordnance Center and School, Aberdeen Proving Ground, Md...HEMANT D. MEHTA, MS, is a structural engineer with A. Woolf & Associates in Boston, Mass. His home is in Allston...Foster Plumbing & Heating Co. in Bridgeport, Conn., employs KENNETH H. MORGAN as a mechanical engineer... FREDERICK A. GOLEC writes that he is a

teaching assistant in the Chemistry Dept. of Boston University... LEONARD POLIZ-ZOTTO, head counselor of Daniels Hall and a graduate student at WPI, has had two music books published: Volumes I and II of Off-Beat Drumming, consisting of rhythm patterns and advice for the rock drummer... FRANK J. ZONE is now a Research Engineer with the Norton Co. of Worcester, Mass.

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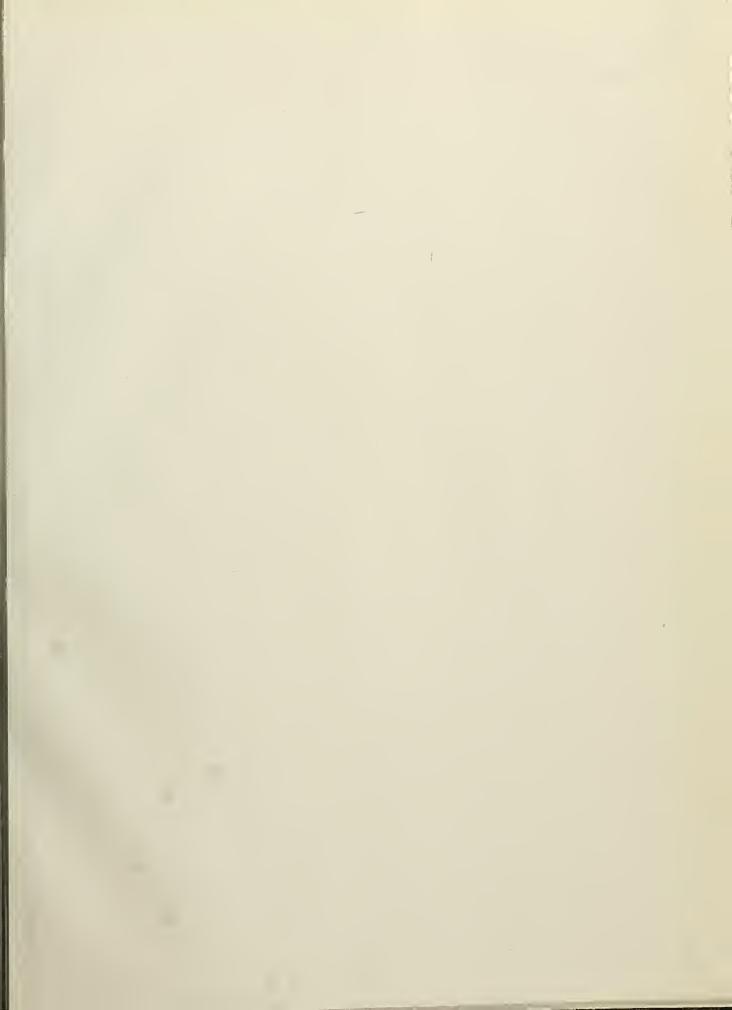
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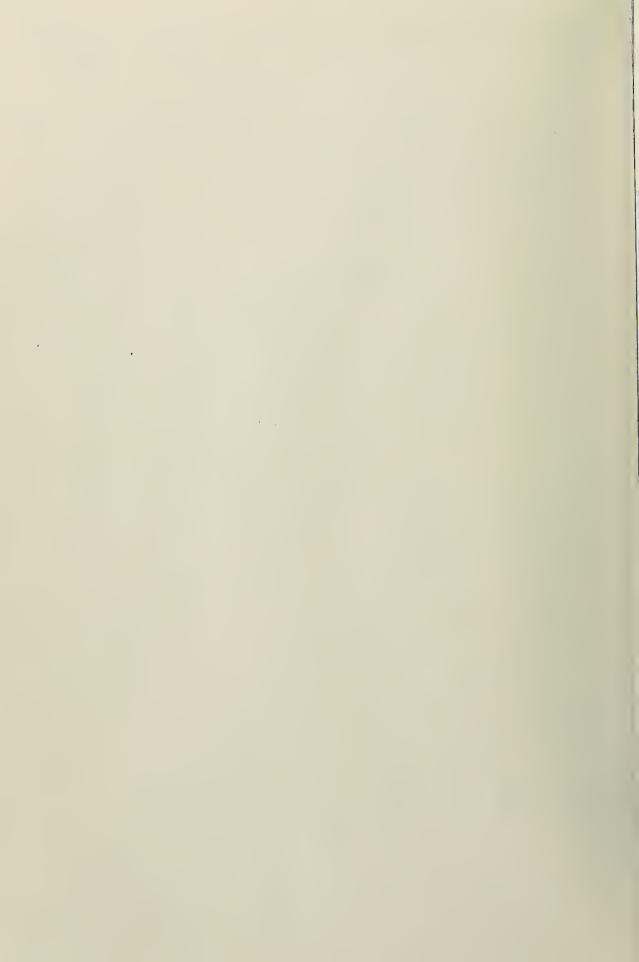
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